THE ASSOCIATION REVIEW

PUBLISHED BY THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF

F. W. BOOTH - - - - - EDITOR
S. G. DAVIDSON, ASSISTANT EDITOR

October, 1902.

Construction and Activity of the Brain with Special Regard to Speaking and Speech - - - H. HOFFMANN 313
Formation and Development of Elementary English Sounds—II - - - - - CAROLINE A. YALE 323
Experimental Phonetics - - - JOHN G. MCKENDRICK 327
The Oral Method and Its Fitness for the Deaf - GIULIO C. FERRERI 344
Calcutta School for the Deaf - - - - - J. N. BANERJI 354
Victorious America - - - - - - GIULIO C. FERRERI 357
The National Educational Association Meeting—Department of Special Education - - - - F. W. B. 362
Reviews

Report of the Clarke School at Northampton, 373—Rassegna della Educazione dei Sordomuti, (Naples), 374—Smaablade for Dovstumme, (Copenhagen), 376—Blatter fur Taubstummenbildung, (Berlin), 378—Nordisk Tidskrift for Dofstumskolan, (Goteborg, Sweden), 382—Il Sordomuto e la Sua Educazione, (Siena), 385—Das Taubstummenbildungs-Wesen im XIX Jahrhundert, Johannes Karth, (Breslau), 387—Revue Generale de l'enseignement des Sourds-Muets, (Paris), 389—Organ der Taubstummen-Anstalten in Deutschland, (Friedberg), 390—El Sordomudo Argentino, (Buenos Aires), 392—Informe Presentado a la Direccion de la Escuela National de Sordmudos, (Mexico), 393—Le Messager de l'Abbe de l'Epee, (Curriere), 394—Tidning for Dofstumma, (Stockholm), 394—L'Echo des Sourds-Muets, (Paris), 395—National Geographic Magazine, (Washington), 395.

Obituaries
Rev. Thomas Gallaudet - - - REV. J. M. KOEHLER 396
Dr. Harvey W. Milligan - - - - - - - - - 403
Deaf Boys at Harvard - - - - - - - - - - 405
Annual Business Meeting of the Association - - - - - - 407
New Members - - - - - - - - - - - - - 411

MT. AIRY, PHILADELPHIA

PUBLISHED BI-MONTHLY DURING THE SCHOOL YEAR, APPEARING THE FIRST OF OCTOBER, DECEMBER, FEBRUARY, APRIL, AND JUNE

[Printing Department of the Pennsylvania Institution for the Deaf and Dumb]

Vol. IV, No. 4 **$2.50 (10s. 4d.) per year**

The American Association to Promote the Teaching of Speech to the Deaf.

(Incorporated Sept. 16, 1890.)

PRESIDENT,

ALEXANDER GRAHAM BELL.

VICE-PRESIDENTS,

A. L. E. CROUTER, CAROLINE A. YALE.

SECRETARY,

Z. F. WESTERVELT.

AUDITOR,

A. L. E. CROUTER.

GENERAL SECRETARY AND TREASURER,

F. W. BOOTH,

(7342 Rural Lane, Mt. Airy, Philadelphia.)

DIRECTORS,

ALEXANDER GRAHAM BELL, MRS. GARDINER G. HUBBARD.
A. L. E. CROUTER.
Term Expires 1903.

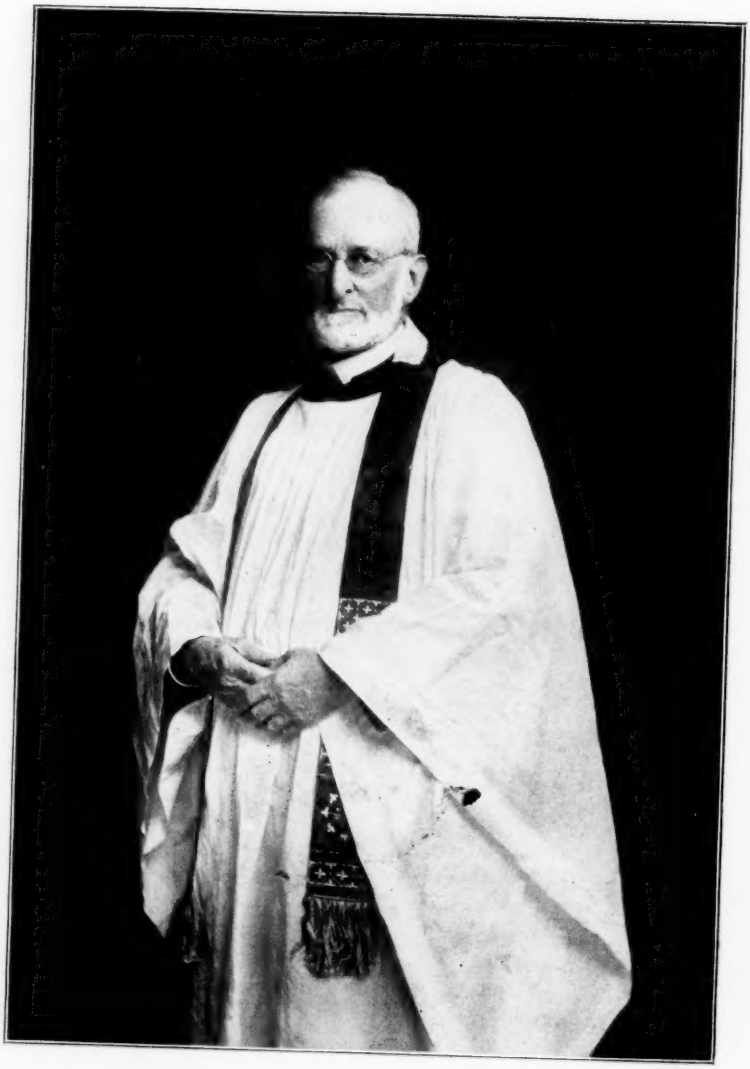
CAROLINE A. YALE, EDMUND LYON, RICHARD O. JOHNSON.
Term Expires 1904.

JOSEPH C. GORDON, SARAH FULLER, Z. F. WESTERVELT.
Term Expires 1905.

The American Association to Promote the Teaching of Speech to the Deaf welcomes to its membership all persons who are interested in its work. Thus the privilege of membership is not restricted to teachers actively engaged in the instruction of deaf children, but is extended to include Directors or Trustees of schools for the deaf, parents or guardians of deaf children, the educated deaf themselves who wish to aid by the weight of their influence and by their co-operation the work that has done so much for them, and all other persons who may have had their hearts touched with a desire to show their interest and to help on the work.

Every person receiving a "sample copy" of THE ASSOCIATION REVIEW is invited to join the Association. The membership (or dues) fee is $2.00 (8s. 4d.) per year, payment of which to the Treasurer secures (after nomination to and election by the Board of Directors) all rights and privileges of membership together with the publications of the Association, including THE ASSOCIATION REVIEW, for one year. To *non-members*, the subscription price of THE ASSOCIATION REVIEW is $2.50 (10s. 4d.) per year.

DONATIONS, ANNUAL SUBSCRIPTIONS, AND BEQUESTS ARE SOLICITED. LIFE MEMBERSHIPS MAY BE OBTAINED UPON THE PAYMENT OF $50.



See page 396.

REV. DR. THOMAS GALLAUDET.

THE ASSOCIATION REVIEW.

VOL. IV, NO. 4.

OCTOBER, 1902.

CONSTRUCTION AND ACTIVITY OF THE BRAIN, WITH SPECIAL REGARD TO SPEAKING AND SPEECH.

H. HOFFMANN, RATIBOR, GERMANY.

Plato's saying, "The gods have given to the brain, because it is the divine and governing element in our being, in accordance with the model of the universe, the form of the globe, this being the most perfect of all forms," proves that even the ancients sought to find the connection between the construction and the activity of the brain. The brain was supposed to be the seat of the soul, but up to the present day the question as to the substance of the soul has not been settled; for there are as many different views regarding the soul as there are different philosophical systems. To give our own views concerning the soul does not come within the scope of this article. Here we intend to deal more with the contents of the soul, and the manner in which this contents is formed, in as far as it can be explained from our knowledge of the construction of the brain. We must first cast a brief glance at *the construction of the brain*, the workshop of the mind. The brain is an organ consisting of several differently shaped portions whose component parts more or less resemble each other. Connection with the spinal cord is made by prolongation of the same [Fig. 1, M], which in its construction resembles the spinal cord. Enclosed in this prolongation of the spinal cord there is a canal which widens toward the top and forms the fourth cavity of the brain, over

which the little brain [Fig. 1, Cb], extends in the shape of an arch. From each half of the little brain cross fibres start, which first run underneath the same, meet in the center and form the so-called "Pons Varolii" [Fig. 1, VI]. Underneath this bridge is found the continuation of the prolonged spinal cord, and even

Figure 1.

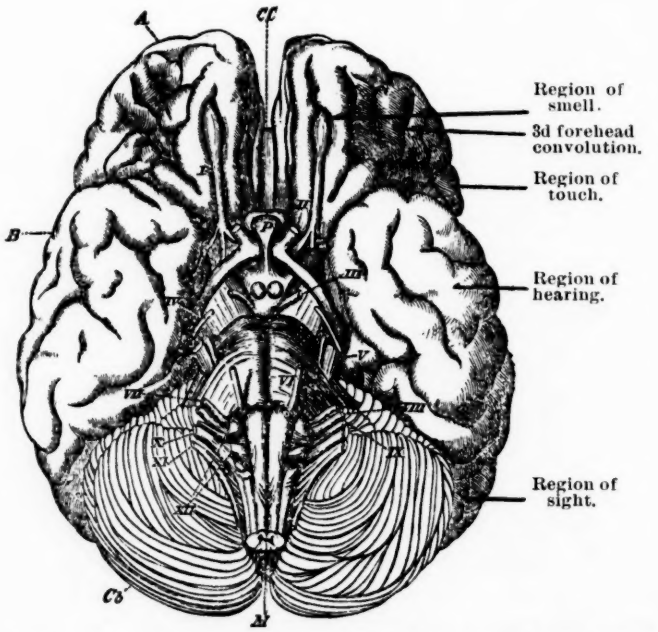
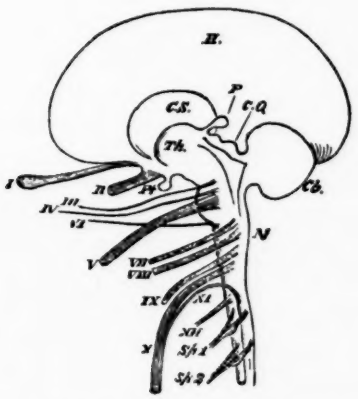


Fig. 1, the lower surface of the brain; *A* the lobe of the forehead; *B* the lobe of the temple; *Cc* the corpus callosum; *Cb* the little brain; *M* the medulla elongata; *P* the appendix of the brain; *I* the olfactory nerve; *II* the optic nerve; *III, IV, VI* the nerves of the muscles of the eye; *V* the trigeminus; *VII* the facialis; *VIII* the nerve of hearing; *IX* the tongue and throat nerve; *X* the lung and stomach nerve; *XI* the accessorus; *XII* the tongue nerve. No. *VI* is placed on the Pons Varolii.

before reaching the "bridge," the lengthwise fibres of the spinal cord divide into two bundles running in different directions [Fig. 1.] The parts of the brain consist of cellular or fibrous substance, the former having a gray and the latter a white color. The spinal cord as well as its prolongation also consist of gray

nerve substance enclosed in white substance; only, in the brain itself this substance is more plentiful than in the spinal cord. The above-mentioned bridge and the lobes of the brain are accumulations of gray nerve substance. But there are more of these accumulations. Thus we see above the lobes four hemispherical raised points [Fig. 2, C. Q.]; we further mention the optic nerve (hill of sight), the "corpus callosum," and the surfaces of the hemispheres surrounding the hind brain (little brain). Continuing to indicate and determine the different

Figure 2.



II the hemispheres of the large brain: *CS* the corpus callosum; *Th* optic nerve (hill of sight); *P* the pineal gland; *Pt* the appendix of the brain; *CQ* the pituitary body (?) (four hills); *Cb* the little brain or cerebellum; *M* the medulla elongata; *I-XII* the twelve pairs of brain-nerves; *Sp 1*, *Sp 2*, the two upper spinal cord nerves.

parts of the brain, we notice that in the four hemispherical points (the four hills, the pituitary body ?) and the lobes of the brain, the entrance to the third cavity of the brain, the midbrain is found. It is narrow, and is surrounded by the optic nerve (hill of sight) [Fig. 2, Th], which may be considered as the final portion of the lobe. The third cavity is covered by a fine membrane which is connected with the pineal gland [Fig. 2, F.], whilst its bottom extends into the *"Hirn-anhang"* (appendix) [Fig. 2. Pt.] In each of the hemispheres of the brain there is

likewise a cavity, the lateral brain cavity, an entrance to which is found on both sides of the midbrain cavity, and the bottom of which is formed by the "corpus callosum" (*streifenhugel*). As the last mentioned, and the optic nerve (hill of sight), are connected with each other by nerve fibres, there is an uninterrupted road from the prolonged spinal cord (*medulla clongata*) to the *corpus callosum.* The two brain-hemispheres cover all the portions of the brain enumerated so far. On the surface they show convolutions, known by different names, separated by deep furrows or fissures. One of these runs from the back and the top to the front and bottom and is called the fissure of Silvius. It is important as forming a starting point for the division of the hemispheres of the brain into five lobes to each hemisphere. For in front of it is the lobe of the forehead, underneath it the lobe of the temple, above it the lobe of the crown of the head, with its continuation towards the back, the lobe of the back part of the head, whilst the fifth lobe, also called "Reil's Island," only becomes visible when the bands of the fissure of Silvius are drawn asunder. We will now mention some of the principal convolutions referred to above. In the lobe of the forehead [Fig. 1, A] we find the lower, middle, and upper convolution of the forehead; in the lobe of the temple, the lower, middle, and upper convolution of the temple, in the lobe of the back part of the head, the convolution of the back of the head. Both hemispheres of the brain are separated by a deep furrow, and connected below by transverse fibres [Fig. 1, CC].

As has already been stated, the entire mass of the brain consists of cells (the white substance consists of fibres running through the interior, connecting the accumulations of gray substance, the centers, with each other, or rising to the surface). The cells, however, are not of uniform shape and arrangement—which justifies us in presuming that each one has to perform a different duty, and that the portions of the brain are of a higher and lower order. Thus we may consider the surfaces of the hemispheres as the regions where the sensation of the action of the senses is noticed and where the mind plays its active part. The portions of the brain lying lower, between the large lobes of the brain and the spinal cord, must be con-

sidered as ranking lower and serving the sensations of the organs, which simply serve to make us conscious of our own body, its needs, and of the increase or decrease of the force of its actions. The uniform cells form on the surface of the brain separate fields or regions, which, however, do not form one unbroken complex, but are interrupted by regions of a different kind. Twelve pairs of nerves start from the brain. Commencing at the front and passing to the back, they are the following: the olfactory nerve [Fig. 2, I], the optic nerve [Fig. 2, II], followed by the motorial optic nerve [Fig. 2, III]. The same purpose is served, viz., to aid in moving the muscles of the eye, by the fourth and sixth pair of nerves [Fig. 2, IV, VI]. The fifth pair of nerves is the tripartite nerve [Fig. 2, V] which imparts sensation to the skin of the face, moves the muscles employed in mastication, and finally produces the sensations of touch and taste in the tongue. The seventh pair, the facial nerve [Fig. 2, VII], gives motion to the muscles of the face; the eighth pair is the nerve of hearing [Fig. 2, VIII], followed by the ninth pair, the tongue and throat nerve [Fig. 2, IX], and by the tenth pair [Fig. 2, X], the lung and stomach nerve. The eleventh, the spinal cord nerve [Fig. 2, XI], starts from the marrow of the spinal cord, passes through the prolonged spinal cord (*medulla elongata*) and leaves the skull through an opening together with the tongue and throat nerve, to produce motions of the throat and neck; the last pair of nerves is the nerve of the tongue [Fig. 2, XII] which serves to move the tongue. The twelfth together with the fifth, seventh, and eleventh pairs of nerves are principally employed in producing the motions of speech. (English physiologists consider the first and second pairs of nerves as separate parts of the brain, and comprise the 7th and 8th in one pair; so that they count only nine pairs of brain-nerves).

The question as to the character of the activity of the brain may briefly be answered as follows: The nerves leading from the organs of the senses to the brain (sensorial nerves) transmit to the brain motions which are carried as far as the shell of the brain and are felt there. These sensations produce in us a picture of our surroundings; in fact—as Meynert teaches—

the consciousness of the nerve-cells and the objects themselves are inseparable. Only frequent repetition of the impressions received by the senses produce lasting sensations, which, as ideas, become part of our consciousness. But nerves do not only lead *to* the brain, but also *from* the brain to the outposts of the body. They are the paths travelled by the impulses to motion from the brain to the various parts of the body (motorial nerves).

We must now observe the activity of the brain somewhat more closely in accordance with the theory advanced by Flechzig: The organs of the senses transmit to each of the cellular ridges of the surface of the brain the impressions received, and effect this by means of the sensorial nerves whose end points spread over one half of the ridge, whilst the other half shows the spreading starting points of the motorial nerves. It was necessary to clearly define the location of the ridge assigned to each organ of the senses, in order to explain the mechanism on which the activity of the brain is based. It seems that Prof. Dr. Flechzig in Leipzig has succeeded in doing this. In his opinion, the ridge or *center of the sense of touch,* where we become conscious of things we touch, lies in the wall of the brain back of the upper part of the forehead and the front part of the skull. The motorial nerves which start from this region, extend into the organs of touch: the hands, arms, and feet, the muscles of the trunk of the body and of the neck, and into the muscles of the eyes and the organs of speech. The *region of the sense of smell* lies above the nose on the lower surface of the brain. The *region of the sense of taste* probably lies along the edge of that of the sense of touch. The *region of the sense of sight* occupies the entire inner surface of the lobes at the back of the head and a narrow strip of the outer arch of the head; whilst the *region of the sense of hearing* occupies the two transverse convolutions of the lobes of the temples. All these regions belonging to the senses take up about one-third of the total surface of the brain. The other two-thirds belong to regions forming a separation between the regions of the senses and causing them to appear like islands. They are called the regions or *centers of association.* Whilst the centers of the

senses show differently formed cells, these centers of association have one and the same formation of cells. They form three distinct regions: the one in front back of the forehead over the eyes, the second below the back part of the crown of the head; whilst the third forms the so-called Reil's Island. Each center of the senses sends to this point numerous nerve-fibres which combine into a knot in each of the centers of association and make it possible to bring into closer association the sensations of the different centers of the senses. Because of this, these three great centers are called centers of association.

We would state here that the activity of the centers of the senses is by no means confined to making us conscious of the observations of our senses, but that they also serve to form into groups the material which they have received. Thus several sounds produced at the same time become an accord; simultaneous or rapidly succeeding impresssions of touch give the idea of a body; sounds combine to form a word. This grouping of the various sensations in the centers of the senses is effected by the aid of the nerve-fibres which in this region are very numerous in the wall of the brain. From this it follows that the arrangement of the centers of the senses also furnishes the explanation of the origin of ideas relating to space and time. But as we stated above, one impression—it is true—will produce a sensation, but it is not sufficient to retain it by the memory, and if necessary to reproduce it as an idea. It may be considered as a fact that each idea is based on the sensation of more than one cell of the brain. But then the depositing of the ideas cannot be effected in the various centers of the senses but in the centers of association, because only in these centers the sensations experienced by *different* cells enter our consciousness simultaneously. From the position which these association centers occupy as regards the centers of the senses which surround them, the purpose of each will become clear. As the hind association center is surrounded by the senses of touch, sight, and hearing, it is the place where the ideas of objects which are tangible and visible, of impressions received by the sense of hearing, therefore also of the sounds and signs

of words, are formed and stored. The eye and the ear supply these centers which we employ more than any others in the acquisition of knowledge. The more or less rich manner in which the hind association centre is supplied furnishes the test as to the mental caliber of a man; and in mentally strong men this center is more developed than in others. The middle association center, the "island," we find to be connected with the front association center, with the centers of the senses of smell and hearing and with the third convolution of the forehead, the center for mechanical motions of speech; it, therefore, unites nerves from all portions of the brain concerned in the formation of speech. To this center belongs the combination of sensations of hearing with the motion of the lips, the tongue, the throat, and in fact all organs of speech. The *front* association center is in close proximity to the center of touch, and stores reminiscences and ideas of all the sensations which are experienced here, and of the various phenomena accompanying the manifestation of different impulses. As the front and back association centers of both hemispheres of the brain are connected, it may be supposed that they act together. The "island" of the left half of the brain is not very strongly connected with that of the right half; which circumstance leads to the supposition that each acts more or less for itself. There is likewise but slight connection between the front and back association centers; and it is probable that the center of touch forms the connecting link. Thereby the importance of this part of the brain is increased, as it not only creates consciousness of bodies, but also combines the various stocks of knowledge, and bases thereon active creation by the brain. It produces the idea of the "I."

How then can the process of speaking and of speech be explained, after what has been stated above? The first attempts of a little child to speak show themselves as babbling, caused by a feeling of pleasure. The motions which are to be observed in this first attempt at speech start from the prolonged spinal cord, or the region of the "Pons Varolii," as these portions of the body contain the beginning of the motorial nerves of sight; but the incitement to these motions starts

from the wall of the great brain, from the center of the sense of touch. Children without the large brain do not babble. and do not give vent to their feelings; all they can do is to produce unarticulated sounds. Soon the child will have recollections and ideas of its speech-motions, just as it will also notice its own babbling and crying through the sense of hearing. At the "island" ideas of motion meet ideas of hearing and associate themselves, so that, without the intervention of the will, the sensations of hearing will produce speech-motions (involuntary formation of sounds). In voluntary speaking the process becomes more complicated. To explain this process, the existence of a region in the wall of the brain must be presumed from which an impetus is conveyed to the organs of speech. This region must be sought in the third convolution of the forehead. Nerves lead to this region from the "island" where the association of the ideas of motion and hearing was effected. If from the "island" an impetus reaches the third convolution of the forehead produced by ideas of motion and hearing, the organs of speech are put in action. The formation of sounds is arbitrary; but, whenever the formation of sounds is effected through ideas of hearing, the road taken by the impetus is as follows: the ear, the fissure of Silvius, the center of the sense of hearing, "island," third convolution of the forehead, front central convolution, facial nerves, nerve of the tongue. As the combination of sounds to words has already been effected in the center of the sense of hearing, and the fixing of ideas thereof takes place in the corresponding association center, it will easily be understood that the rendition of words must be effected in the same way as that of single sounds. The speaking of words whose meaning is understood requires the aid of the hindmost association center, where the combination of images, as produced by sight, hearing, touch, etc., is effected, because nerves lead from this center to the center of the senses concerned. If the child has some time before seen a crowing rooster, a barking dog, or a swinging bell, the image was formed in the center of the sense of sight, and the sound in that of the sense of hearing; as both these centers of senses send out nerves into the hindmost asso-

ciation center, it is here where the association of the two observations is effected. Numerous nerves leading hence to the "island" and to the third convolution of the forehead take care of the naming or expression of the image, or through the rendition of the name by sound or the expression by sound make the image the property of our consciousness. In loud intelligent reading the images of letters and words are observed by the center of the sense of sight in order to lie ready as ideas combined with the ideas of their meaning in the hindmost center.

The explanation of the gradual development of the speech of children is found in the fact that, at the birth, the brain of the child is not yet complete in all its parts. Thus the mental centers, especially, do not fully develop until all the centers of the senses have been fully formed and have been connected with the former by nerve fibers. Although a former theory (a great deal in this whole field of investigation is of course purely hypothetical) maintained that in babbling and in reflectory speech, the entire process took place underneath the wall of the brain, and that consequently only the centers lying underneath this wall played an active part, Mr. Flechzig has satisfactorily demonstrated that even here, at the very beginning of speech, certain parts of the wall of the brain must be considered the theatre of action, and that the bundles of nerves lying underneath the wall of the brain must be considered in the light of stations on the nerve-route and switches for the direction to be given to the impetus, in so far as they do not serve to receive the impressions of the organs of the senses.

FORMATION AND DEVELOPMENT OF ELEMENTARY ENGLISH SOUNDS.

CAROLINE A. YALE, NORTHAMPTON, MASS.

II.

CONSONANTS.

P. [P]

Formation:—Lips shut then separated with an audible expulsion of breath. Ex., *p*an, o*p*en, ho*p*. In regard to this sound Prof. A. M. Bell says, "The formation of *P* consists, 1st, in a steady, equal contact of both lips, so as to retain the breath perfectly behind them; and, 2nd, in an equal and rapid disjunction of the lips, to allow the breath to escape." In the "Introduction" to Soule and Wheeler's "Manual of English Pronunciation and Spelling" this sound is said to be "formed by a firm contact of the edges of both lips and a compression of the breath within the mouth and pharynx, followed by a sudden separation of the lips, allowing the compressed breath to escape." Guttmann in his "Gymnastics of the Voice," says that "*P* is formed by closing the lips tightly, separating the oral from the nasal cavity by means of the palate, and emitting the air compressed within the oral cavity by suddenly opening the lips."

Method of Development:—Imitation. If a narrow strip of paper or a feather be held before the lips as the sound is given, the breath striking it will show the pupil its proper force and direction. Avoid exaggeration in movement.

B. [B]

Formation:—Lips shut, as for *p*, and held while voice is given. Ex., *b*ox, *b*a*b*y, tu*b*. Professor A. M. Bell says that the oral action in *p* and *b* is precisely the same; "but while the organs are in contact, the glottis is brought into sonorous position, and an instantaneous effort of voice is heard before the separation of the organs."

Guttmann says, "We may, in fact, say that with *b* the lips are opened by the voice, and with *p*, simply by the air. With *p* the lips must be closed *tightly* but not so with *b*." Dr. Arnold in his "Manual" teaches that in this sound the lips are less closely compressed than for *p*, stating that this is true of all vocal consonants as compared with their corresponding non-vocal forms. Professor Bell says "*P* and *B*, *T* and *D*, *K* and *G*, are pairs of articulations formed by exactly the same organic motions, the only difference being in the material which the actions modify ; *whispered* breath in the one case, *vocalized* breath in the other."

Method of Development:—Contrast with *p*. The pupil, placing his hand on the teacher's chest, repeats with her *p*, *p*, *p*, *bŭ*, *bŭ*, *bŭ*, feeling the vibrations in the chest, also in the throat, lip and cheek when voice is added. The sound of *b* is somewhat difficult to teach alone, and when so taught is, as a rule, forced and disagreeable in combination. A better result may be obtained by teaching it at first in combination with a vowel. This relieves the pressure and gives a clear sound. Teach *b inital* as *bŭ* (ƀl) and *b final* as *ŭb*. using the "natural vowel" first in combination with it. Then drill upon it—initial and final—with all the other vowels. It may sometimes be advisable to write *final b* as b_p, thus indicating a closing breath vanish. Arnold considers *b* as simply a "voice stop" and therefore to be taught as final first.

M. [m]

Formation:—Lips shut while voice passes through the nasal passages. Ex., *m*e, la*m*p, hi*m*. Professor Bell says that "the *contact* of the soft palate with the back of the tongue forms the English element *N G*, in which the voice passes entirely through the nostrils," and that the soft palate is "*approximated* to the tongue for the English articulations *M* and *N*; in forming which, the voice *escapes* by the nose only, but reverberates in the mouth; where it is shut in, by the lips for *M*, and by the tongue and front of palate for *N*." The duration and also the amount of vocality of this sound, as well as of other liquids, vary greatly in different combinations: before and after non-vocal consonants it is short and has but slight vocality; before vocal consonants and

vowels it is longer and when final it sometimes becomes even syllabic in quantity. Compare la*m*p, s*m*oke, *m*oon, ryth*m*.

Method of Development:—Imitation. Attract the pupil's attention to the closed lips and let him feel the vibration in the lips and, if necessary, also in the nose. Great care needs to be exercised lest the pupil gives the sound of *ng* with *m*. This defect may often be detected by inducing the child to attempt *ma*. If the back of the tongue is raised high, *mnga* will be given instead of *ma*.

T. [ʊ]

Formation:—Point of the tongue shut against the upper gum, then removed with an audible expulsion of breath, Ex., *t*op, ci*t*y, car*t*.

Method of Development:—I. Imitation. II. By analogy, from *p*. Let the pupil see that the action is the same in giving both sounds although neither the active nor the passive organ remains the same. If necessary, practice the action with the point of the tongue against the upper lip before applying it in its normal position.

D. [ʊl]

Formation:—Point shut as for *t* and held while voice is given. Ex., *d*og, gar*d*en, ol*d*. See remarks on shut consonants as quoted under *B*.

Method of Development:—Contrast with *t*. Attract the attention of the pupil to the vibrations in the chest, throat and also in the tongue when *dŭ, dŭ, dŭ* is given. The same reason favors the teaching of this element in combination with a vowel that has been stated in the case of *b*. Final *d* may be written d_t.

N. [ʊ]

Formation:—Point of the tongue shut against the upper gum while voice passes through the nasal passages. Ex., *n*o, a*n*y, pi*n*. See remarks under formation of *M*.

Method of Development:—By analogy from *m*. Let the pupil see that the character of the two sounds is the same, the only difference being the application of the point of the tongue to the upper gum instead of the lower lip to the upper lip. Let care be taken that *ng* is not given with *n*.

K. [ɑ]

Formation:—Back of the tongue shut against the palate, then separated with an audible expulsion of breath. The precise point of contact varies considerably according to the vowel position with which it is combined. *C* (hard) and *ck* are also spellings for this sound. Ex., *k*eep, *c*art, cro*ck*ery, boo*k*.

Method of Development:—I. By analogy from *p* and *t*. Let the teacher attract the pupil's attention to the similar action in these sounds by repeating again and again *p--t--k*, *p--t--k*, *p--t--k*. II. Induce the pupil to attempt *t* while the point and front of the tongue are held down.

G. [ɢ]

Formation:—Back of the tongue shut against the palate and held while voice is given. The point of contact varies for this sound as for *k*. See remarks on shut consonants as quoted under *B*. Ex., *g*o, a*g*ain, dog.

Method of Development:—Contrast with *k*. Let this sound be taught in combination with a vowel as suggested for *b* and *d*. The vibrations of the voice may be felt in the chest, throat and back of the neck when *gŭ, gŭ, gŭ* is given. Final *g* may be written g_k.

Ng. [ɢ]

Formation:—Back of the tongue shut against the palate and held while voice passes through the nasal passages. See note on liquids under *M*. Ex., si*ng*er, ri*ng*.

Method of Development:—I. from *m* and *n* by analogy. II. With the mouth open pass a steady stream of breath through the nose, then vocalize it.

(*To be continued.*)

EXPERIMENTAL PHONETICS.[1]

JOHN G. M'KENDRICK, F. R. S.

The movements of the organs of voice and speech are so complicated as to require for their elucidation the application of many methods of research. When one speaks there are movements of the lips, tongue, soft palate and larynx, and sometimes movements of the muscles of expression. Then, again, there are special characteristics about vowel sounds which apparently distinguish these from the sounds of musical instruments. Thus questions arise as to the true nature of vowel sounds, and as to what is the physical constitution of a word of several syllables. It has also been suggested that language might be recorded, not by letters or syllables, but by signs or symbols which would indicate what had to be done by the vocal and articulating organs for the production of any given sound. There might thus be a physiological method of expressing speech by a series of alphabetical symbols for sounds varying in pitch, intensity and quality. It will be seen that experimental phonetics constitutes a wide field of research, not only of great scientific interest, but also one having practical aspects not at first apparent. From the nature of the investigation, also, the problems seem to be specially suited for the application of the graphic method of research.

In 1875, an investigation was carried out by Havet and Rosapelly in the laboratory of Prof. Marey in Paris, in which the pressure of the air in the nose, the movements of the lips, and the vibrations of the larynx were simultaneously recorded. Special contrivances were devised for transmitting these movements to three of Marey's tambours, so arranged as to record on the surface of a blackened drum three superposed curves

[1]Read before the Section of Physiology at the meeting of the British Association in Glasgow, September 13, 1901, and condensed from Nature, Vol. 65, No. 1678.

which indicated the order of succession, duration and intensity of the movements of the organs. The emission of air from the nostril indicated movements of the soft palate, and these were signalled by an indiarubber tube introduced into one nostril while the other end was connected with a tambour, as in Fig. 1. A small electromagnetic apparatus was placed over the larynx, and by making and breaking a current the vibrations of the larynx were transmitted to another tambour. The movements

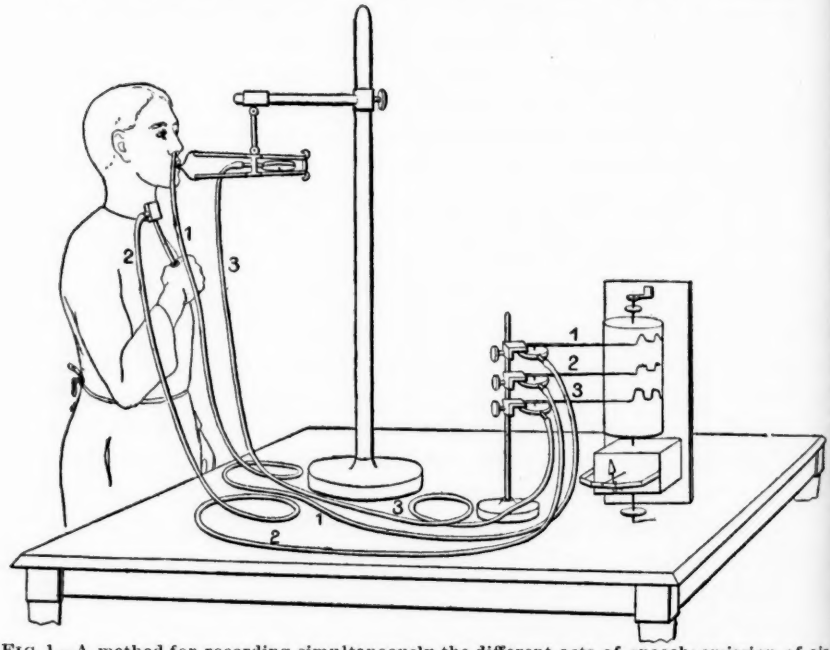


FIG. 1.—A method for recording simultaneously the different acts of speech: emission of air by the nares (tube and lever, 1), vibrations of the larynx (2), and movements of the lips (3).

of the lips were recorded by a device which caused the pressures to act on a third tambour, as is shown in the figure.

This method was found to give characteristic tracings for the sounds of consonants, but the records obtained from vowel-sounds were all very much alike. It was also observed that if one of the tambours did not act, say the one recording the vibrations of the larynx, it was difficult to distinguish the tracings of certain consonantal sounds. Thus *p* resembled *b*, so far as

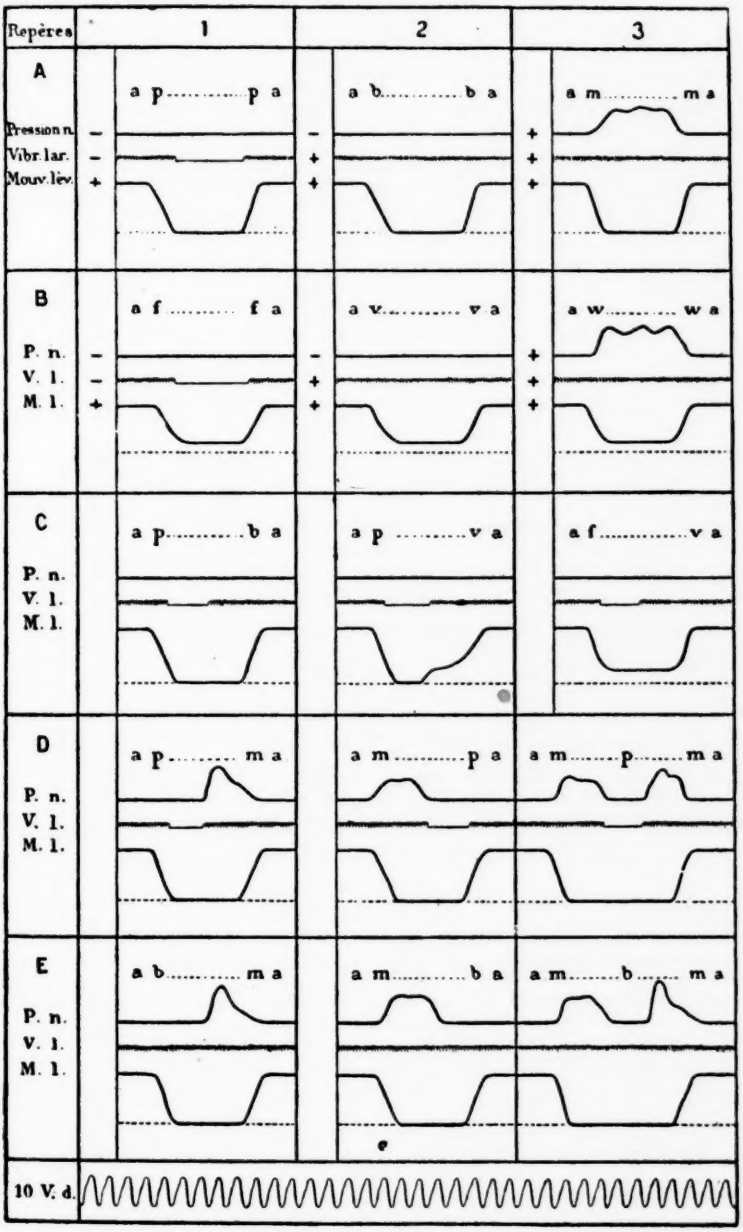


FIG. 2.—Tracings of nasal, laryngeal and labial movements in the pronunciation of various phones.

the movements of the lips and the nasal pressures were concerned, but with *b* there is a vibration of the larynx as well, while this is absent in the tracing of *p*. In Fig. 2 is shown a table in which is depicted the traces obtained on uttering the vowel *a* either before or after various consonants. In these tracings, P *n* indicates nasal pressure, V *l* vibrations of the larynx, and M *l* movements of the mouth. Five examples are given of combinations of A with consonants. If there is no emission of air from the nostrils, the line P *n* is unbroken and horizontal, but if there is emission then an elevation is seen as in A 3 with *a m*, or *m a*. A sinuous line in V *l* shows that the larynx vibrates, but if there is no laryngeal vibration the line

FIG. 3.—Changes of expression during speech. Chronophotography. Ten images per second.

is straight. It will be observed that in some cases the larynx vibrates throughout all the experiment, as in A 2, while in others there is an interruption, as in B 1. The movements of the lips in M *l* show a curve which varies in amplitude and duration according as the lips are more or less approximated and according to the duration of complete or partial occlusion.

These syllabic sounds may be termed *phones*. This research is an excellent example of the application of the graphic method to the movements of speech. The method has been much developed by Rousselot in the College de France, where there now exists a special laboratory for research in phonetics.

Prof. Marey, whose earlier researches are well known to have had much to do with the development of the kinematograph, employed, so long ago as 1888, chronophotography to catch those evanescent changes of the countenance, the sum total of which give expression to the face in speech. In Fig. 3 are seen the changes of expression in a woman's face in speaking during a period of half a second. If these successive pictures are projected by a lantern there is an animated face on the screen. In this way Marichelle succeeds in placing before the eyes of deaf-mutes images of the movements of speech which they are urged to imitate.

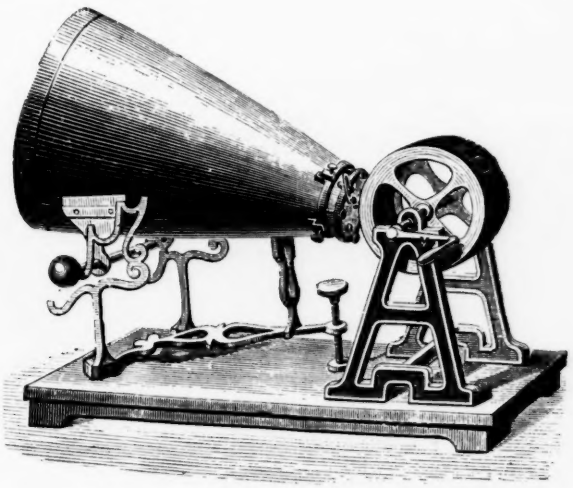


FIG. 4—Phonautograph of Leon Scott. A paraboloid resonator, closed at one end by a membrane, to which a light lever is attached. C is a drum covered with smoked paper on which the lever traces a curve. As C rotates, it moves from right to left.

It is interesting, in the next place, to trace the efforts that have been made by physicists and physiologists to record the pressures produced by sound waves and more especially those of the voice. In 1858, Leon Scott invented the phonautograph, seen in Fig. 4. In its first form this instrument gave very imperfect tracings, but it is of great interest as being the forerunner of the phonograph. It was much improved by Rudolph König, of Paris. Donders, in 1868, was the first to use the in-

strument in the investigation of vowel-tone. Then came the logograph of Barlow in 1876, which was a membrane furnished with a rigid but light lever having its fulcrum at the edge of the membrane while the power was applied from the centre of the membrane. This gave more accurate tracings, that is to say, tracings that indicated with more precision the variations of pressure on the membrane. Examples are given in Figs. 5, 6, and 7.

In Fig. 5 at A the membrane is at rest; at B the lever is raised by the sudden emission of the consonant *b*, and this is succeeded by the prolonged vibration of the vowel *e*. Fig. 6 gives a different picture for *e b*; A is the vowel *e*; B the closure of the lips at the beginning of the consonant; this closure lasts

FIG. 5.—Tracings of the sound *b e*.

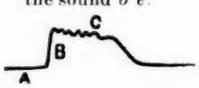
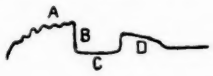


FIG 6—The sound *e b*.



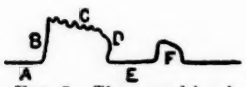


FIG. 7.—The sound *b e b*.

during C, and D is due to the elasticity of the air compressed in the mouth. In Fig. 7, *b e b*, we find the elements of Fig. 5 and 6. By the logograph the consonantal sounds were alone depicted, the records of the vowels being very imperfect.

There was still a demand for a recorder of greater accuracy. Schneebeli, in 1878, devised an instrument seen in Fig. 8. From the center of a parchment membrane arises a thin but rigid steel plate; attached to this, near the point, is another steel plate passing horizontally from the edge of the metallic ring carrying the membrane. The movements of the membrane are five times increased in amplitude, while the extreme lightness of the lever reduces to a minimum the effects due to inertia. Examples of curves obtained by this method are shown in Fig. 9.

A very sensitive apparatus, termed the *Sprachzeichner*, has also been introduced by Hensen for recording the delicate vibrations of a membrane. Valuable observations have been made with the aid of this instrument by Wendeler, on consonant sounds, by Martens, on vowels and diphthongs, and by Pipping, on vowels.

Such are some of the mechanical contrivances that have been devised for recording the movements of a membrane. None are free from error, however delicate they may seem to be, owing to the inertia of the parts, and consequently other arrangements were demanded. In 1862 Rudolph König intro-

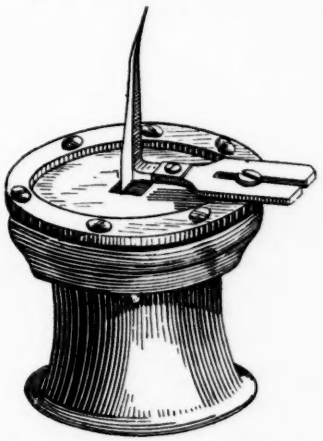


FIG. 8.—Arrangement of Schneebeli for recording movements of a membrane.

duced his well-known method of showing the movements of membranes by manometric flames. The apparatus is now so well known as to require no detailed description. Gas is led by a tube into a small capsule of wood, the cavity of which is divided by a thin membrane. The gas passes into the right half of the cavity and escapes into a small burner, where it is lit. If sound waves are diverted by a small conical resonator into the left half of the capsule the membranous partition vibrates, there are alternations of compression and of rarefaction in the gas on the right side, and the flame is agitated, moving upwards and downwards with each vibration. The method of Wheat-

stone of dissociating the flames by a rotating mirror is then employed, and a sinuous ribbon is seen in the mirror. The ribbon is cut vertically into teeth, some larger, some smaller. The larger, less frequent, correspond to the fundamental tone of the sound, the smaller to the harmonics that enter into the composition of the compound tone on which the quality of the vowel depends. These flame pictures are only seen for an instant, and many efforts have been made to fix them by photographic methods.

Doumer obtained a brilliant flame by burning carburetted hydrogen in oxygen, and he also introduced into such re-

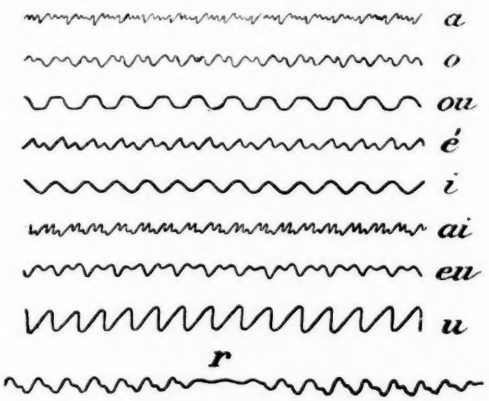


FIG. 9.—Curves of various vowels and of the consonant *r* recorded by the apparatus of Schneebeli.

searches a chronophotographic method by reproducing the images of a flame acted on by a tuning-fork of known pitch. Marage, to whose researches we shall afterwards refer, feeds the capsule with acetylene, and thus obtains a luminous flame.

It will be observed that all manometric flames seen in a rotating mirror are inclined, as their composition is due to a horizontal and vertical translation, and the faster the mirror is rotated the more they are inclined.

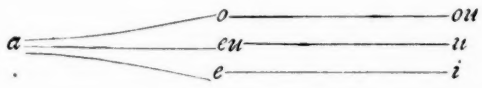
Efforts have also been made to analyse sounds by photographing a ray of light reflected from a vibrating mirror. Long ago, but without photography, Czermak applied this method to the phenomenon of the pulse, and in 1879 Blake

devised a mirror for thus recording speech. He used a small metallic plate, in the centre of which was a small hook which is attached to a very light mirror delicately swung on two pivots. A ray of light is thrown on the mirror by a convex lens; after reflection it again traverses a lens and falls on a photographic plate in movement. Sharp, well-defined images are thus obtained.

The invention of the tinfoil phonograph by Edison in 1877, and the improvement of the instrument by the labors of Edison, Graham Bell, and others in more recent years, has made it possible to investigate phonetic phenomena with the aid of this instrument. In 1878 Fleeming Jenkin and Ewing devised a method of recording curves from the imprints on the tinfoil covering the drum of the phonograph, and these curves were submitted to harmonic analysis. This was also attempted by A. M. Mayer in the same year. The subject was taken up by Hermann about 1890, and he obtained valuable tracings by using the wax-cylinder phonograph. He succeeded in obtaining photographs of the curves on the wax cylinder, a beam of light reflected from a small mirror attached to the vibrating disc of the phonograph being allowed to fall on a sensitive plate while the phonograph was slowly travelling. In 1891 Boeke measured with great accuracy the dimensions of the marks on the wax cylinder, and from these constructed the corresponding curves. This method has also been adopted by Maridelle. McKendrick, in 1895, photographed the marks on the wax cylinder of the phonograph, and in 1896 he devised a recorder for enlarging the curves on the well-known principle of the syphon recorder. In 1899 Scripture, of Yale, investigated vowel-sounds with the aid of the gramophone. He transcribed, by an ingenious mechanical device, the marks on the gramophone disc into the forms of curves, and made a minute analysis. Lastly, Marage, in a series of masterly papers, reinvestigated the whole subject of vowel-tones with the aid of a chronophotographic method and a special form of syren invented by himself.

The various experimental methods we have described have been chiefly directed to an examination of the nature of vowel-

sounds. What is it that gives the peculiar quality to the sound of a vowel? How is it that we can, by the ear, identify the sound of any vowel, whether it be spoken or sung? How is it that if we sing a vowel on the notes of a scale we can still identify the vowel, whatever may be the pitch of the note on which it is sung? The scientific investigation of the nature of vowels begins with Willis, who, in 1829, imitated the larynx by means of a reed, above which he placed a resonator, tuned to one of the harmonics of the reed. He also imitated vowel-tones by holding an elastic spring against the edge of a toothed wheel, and he placed the vowels in the following order---*ou*, *o*, *a*, *e*, *i*. In each case a compound tone was produced which retained the same pitch so long as the wheel revolved at the same rate. By keeping the wheel revolving at a uniform rate, and at the same time changing the length of the spring which was allowed to vibrate, Willis found that the qualities of various vowels were imitated with considerable distinctness. In 1837 Wheatstone, in a criticism of Willis, made some important suggestions. In 1854 Grassmann announced a theory as follows: The vocal cords excite the resonances of the cavity of the mouth; the tonality changes with the degree of opening of the mouth by the development of some of the harmonics of the fundamental tone emitted by the larynx. According to this view, the buccal cavity adds by its resonances certain harmonics to the fundamental laryngeal sound. Grassmann classified the vowels according to the number of harmonics which they contained, in the following table:—



In sounding *a* the mouth is widely opened and the fundamental and eight harmonics are produced; in the third series, on the contrary, there is only one harmonic sounded, which is more and more acute as we pronounce the vowels in the order *ou*, *u* and *i*. The vowels of the second series, *o*, *eu* and *e*, are transitional between the first and the third. Thus we pass from *a* to *ou* by *o*, from *a* to *u* by *eu*, and from *a* to *i* by *e*.

Donders showed that the cavity of the mouth, as arranged for the giving forth of a vowel, was tuned as a resonator for a tone of a certain pitch, and that different pitches corresponded to the forms of the cavity for the different vowels. This he discovered by the peculiar noise produced in the mouth when the different vowels are whispered. The cavity of the mouth is then blown like an organ-pipe and by its resonance reinforces the corresponding partials in the rushing wind-like noise. Then the question was taken up by Helmholtz. He attacked it both by analysis and by synthesis. He analyzed the vowel-tones by his well-known resonators, aided by his own singularly acute ear, and he attempted to combine, by means of tuning-forks, the tones which he thought existed in a vowel, so as to reproduce the sound of the vowel. In the latter part of the investigation he was by no means successful. These investigations led Helmholtz to put forward in succession two theories as to the formation of vowels. The first was that, as in all musical instruments, the quality or timbre of the vowel depends on the fundamental tone, reinforced by certain partials or over-tones, of which a number are produced by the vocal cords along with the fundamental tone, the reinforcement depending on the resonance of the cavities above the vocal cords. This theory was upset by the use of the phonograph. If a vowel is sung to the phonograph while the cylinder is travelling at a certain speed, the vowel-tone will be reproduced with exactly the same quality if the cylinder is driven at the same speed, but if it is driven faster, then the quality of the vowel will be changed, so much so as to be scarcely recognisable. M. Marey narrates that Donders and he first made this observation when it so happened that the two savants were present in Paris at a public demonstration of the phonograph soon after its invention. Donders sang the vowel tones to the instrument, and then asked the operator to vary the speed of the cylinder during the reproduction. Then the vowel *a* became *o,* and *e* became *ou.* Thus while the phonograph reproduces in a wonderful way the tones of musical instruments without change of quality, it cannot transpose vowel-tones without altering their character. This special character

or quality cannot, then, depend on the overtones reinforced by the oral cavities being simple multiples of the fundamental tone, and Helmholtz's first theory had to be abandoned.

This led Helmholtz to advance a second theory as follows: Each vowel is characterised by a certain harmonic or partial tone, of constant pitch, whatever may be the pitch of the note on which the vowel is sung or spoken. Attempts were then made, notably by Helmholtz and König, to fix the pitch of the characteristic partial tone or vocable, and there appeared to be considerable differences in the results of the two distinguished observers, differences amounting to as much, in some cases, as three semi-tones.

The next step was, as has already been explained, to transcribe the marks on the wax cylinder of the phonograph, made on singing or speaking a vowel, into sinuous curves and to subject these to harmonic analysis. It is not difficult, in comparatively simple cases, to obtain a curve which is the algebraic sum of the ordinates of several sinussoidal curves, but it is not so easy to do the reverse operation, namely, to analyse the curves. Fleeming Jenkin and Ewing, afterwards Schneebeli, Hensen, Pipping and Hermann, have done this in accordance with the theorem of Fourier and the law of Ohm. In particular, Hermann, by a beautiful and ingenious method, has analyzed the curves obtained by his photographic device, and has modified the theory of Helmholtz. His statement is that the oral cavity produces independently a harmonic or partial tone which has no definite relation to the fundamental tone emitted by the larynx. A vowel, according to him, is a special acoustic phenomenon, depending on the intermittent production of a special partial, or "formant," or "characteristique." The pitch of the "formant" may vary a little without altering the character of the vowel. For *a*, for example, the "formant" may vary from *fa* to *la*, even in the same person. He has also attempted, but not with complete success, to reproduce the vowel-tones by synthesis.

There are thus three theories: (1) the first of Helmholtz, now abandoned, that the pitch of the partials is represented by simple multiples of the vibration periods of the fundamental; (2)

the second of Helmholtz, that the pitch of the characteristic partial is always fixed, but has a definite relation to the pitch of the fundamental; and (3) that of Hermann, that the pitch of the characteristic partial or "formant" is not absolutely fixed.

The difficulty of harmonizing these theories has stimulated the zeal of many workers, and in particular Dr. Marage has been remarkably successful in his researches into the nature of vowels. He first of all criticises the second theory of Helmholtz, pointing out that the failure to reproduce the vowels by synthesis is strongly against it. Thus while, by tuning-forks, the pitch of which is that of partials of the fundamental tone, *ou*, *o* and *a* may be badly reproduced, it has been found impossible to reproduce E and I. He then objects to the theory of Hermann, namely, that the vowel is an oral intermittent and oscillating tone; first, that the method of recording the vowel on the wax cylinder of the phonograph causes grave errors, because the mouthpiece, tube, air chamber, and vibrating disc all profoundly modify the vowel; second, that the method of analysis by Fourier's theorem assumes that the vowel curves are constituted by superposed simple curves, which is precisely the question at issue, and therefore the argument is a *petitio principii*; and third, that the data obtained by his method have not enabled Hermann to reconstruct the vowels with greater success than Helmholtz. Marage then enters upon his own method, which consists essentially of using a special apparatus constructed on König's principle of manometric flames, but so simple as to be practically free from sources of error; that is to say, there is no mouthpiece, tube or lever. The pictures of the flames were produced photographically by feeding the flame with acetylene gas, and chronophotometrical records were taken with each experiment. He then finds that the flame pictures of I, U and OU show *one* flame, E, EU and O two flames, and A three flames. So that the classification of the vowels by flames is exactly that of Grassmann. Each vowel, when all errors have thus been got rid of by simplifying the apparatus, always gives the same picture for any given note. The picture is that of a continuous periodic curve, and the number of periods

in a second corresponds to the laryngeal note, while the *form* of the period characterises the vowel. With the same vowel the period changes with the note. When the note is near the pitch of ordinary speech, the period varies very little. This is not so when the vowel is sung; the period then disappears until there is only the laryngeal note. Marage has also by synthesis reproduced the vowels with remarkable success. His first experiments with resonators were not quite satisfactory; he could reproduce OU, O and A, but not E and I. He ascertained, however, that to reproduce A the resonator must be tuned to the third harmonic or partial of the note on which A was sung; that to reproduce E, EU and O the best result was obtained when the resonator gave the second partial; and I, U and OU were imitated (but not successfully) when the resonator was in unison with the laryngeal tone.

Marage finally devised a syren rotated by an electric motor and consisting of a disc having in it a triangular window representing the glottis. The air is driven, under pressure, through this aperture and then falls on another disc having windows cut out of it in groups according to the nature of the vowel to be synthetically reproduced. Thus the disc for A has four groups, each group consisting of three triangular slit-like windows; for O and E the disc shows five groups, each consisting of two slits; and for I and OU there are many slits, without these being arranged in groups. The slits are very large for O and narrow for E, and large for OU and narrow for I. He then moulded a series of casts of the interior of the oral and pharyngeal cavities of a human subject, as these were adapted for the singing of the different vowels, and from them constructed masks or headpieces which could be placed over the syren so that the air escaping from it passed through cavities of the mask. He found that if air was driven through the masks under a pressure of only 7 centimetres of water, the timbre of the corresponding vowel was at once perceived, as in whispering. Marage's view is that to form a vowel the true vocal cords vibrate in a horizontal plane, in such a way as to influence by their greater or less degree of approximation the escape of air.

If the air escapes in three little puffs as it were (the cords vibrating during each puff a number of times equal to the pitch of the note on which the vowel is spoken or sung), so that there are intervals between the groups of puffs, then the vowel A is the result. The oral resonator is in unison with the sum of the vibrations and the vowel is emitted. If the resonator (either artificial or the oral cavity, as in life) is tuned to the third harmonic of this note, then the vowel A is modified; the same applies to E and O, which have the second harmonic, and in passing from the one vowel to the other it is sufficient to change the aperture of the glottic opening. Thus for A, if the fundamental note is n, the oral resonator must be tuned to $3n$; for E and O, if the fundamental is n, the oral resonator gives $2n$; and for I and OU the resonator is in unison. If this is not so, then the quality of the vowel is much altered. Thus if the syren gives A, and the plate used is that for OU, then the sound is A modified. This agrees with the experience of teachers of singing, who hold that a badly sung vowel is a vowel-sound emitted into a cavity adjusted for another vowel. Marage has also found that when the sounds of his syren, aided by the masks, are examined by the manometric method, the flame pictures appear as they may be expected to do, that is, groups of three flames for A, of two for E, EU, and O, and of one for I, U and OU. Vowels then, according to him, are due to an intermittent aero-laryngeal vibration, strengthened by the oral cavity and producing OU, O, A, E and I, when it is in unison with the sum of the vibrations; transformed by it, and giving origin to other vowels, when there is no unison; and the number of intermittences gives the fundamental note on which the vowel is emitted. If the oral cavity acts alone, the vowel is whispered; if the larynx acts alone, the vowel is sung; and if the two act the vowel is spoken. Marage has applied his method with much success in testing the ear and in the treatment of mutes who are not absolutely deaf. His memoir is characterised by great simplicity and at the same time by thoroughness.

But the study of vowels is not the only result of recent research in phonetics. The analysis of consonantal sounds is now being carried out by various workers, such as Pipping,

Scripture, and Lloyd. Meyer, in Hermann's laboratory, has investigated the pitch of words, sentences and syllables in speech. This has also been studied by phonographic tracings by Marichelle. The whole subject has also a practical bearing, as the knowledge acquired enables the teacher of deaf mutes so to instruct his pupils in the use of their organs as to avoid the deary monotone of those who learn to speak by watching only the movements of the lips.

It only remains to notice the remarkable monograph of Jespersen. This is an attempt to aid the study of phonetics by the use of a scientific nomenclature to express sounds, so that just as the chemist represents by letters and figures the nature of a chemical substance of complex constitution, so the student of phonetics may be able to express the sounds of words by symbols. The visible-speech system of Melville Bell consisted of symbols which expressed more or less accurately the physiological movements to be made, or the position to be assumed, during the pronunciation of a given sound; but the symbols of Jespersen are letters and figures. The letters or figures, however, to be useful must have a physiological meaning. Strictly speaking the symbols denote, not sounds, but the elements of sounds. Thus so simple a sound as *m* is physiologically the result of (*a*) lips shut; (*b*) point of tongue resting in the bottom of the mouth; (*c*) surface of tongue not raised towards the palate; (*d*) nasal passage open; (*e*) vocal cords vibrate; and (*f*) air expelled from lungs. The attempt of Jespersen may be called an analphabetic system of writing, symbolising, not sounds, but the elements of sounds. At present it is severely technical, but it seems to "provide a means of writing down and describing phonetic minutiæ in a comparatively easy and unambiguous manner." It will do for the phonetician what symbolism does for the mineralogist. It is a kind of algebra for speech sounds.

In advocating the establishment of a photographic museum, to be a visual register of the past, Janssen recently wrote as follows: "Photography registers the chain of phenomena during time, just as writing registers the thoughts of men during the ages. Photography is to sight what writing is to thought. If there is any difference, it is to the advantage of photography.

Writing is subject to conventionalities from which photography is free; writing employs a particular language, while photography speaks the universal language."

But if there is to be a museum of photographs, appealing to the sense of sight, why should we not have a museum of sounds, in the shape of phonograph records, appealing to the sense of hearing. How little can we tell from written characters the exact sounds of ancient Sanskrit, or how Demosthenes spoke in Greek or Cicero in Latin? Would it not now be interesting to hear the exact accent of old English, or the Scotch of the fifteenth century? All dialects should be carefully registered and put aside for future consultation, and thus we would do for the ear what we do for the eye. No doubt such a collection of phonographic records would help onwards the science of language.

THE ORAL METHOD AND ITS FITNESS FOR THE INSTRUCTION OF THE DEAF.[1]

Summary.—In what the efficacy of a method consists.—The reasons for the diffusion of the mimic system.—The reasons of the worth of the oral method, and its nature.—What the oral method was in the first historical period of our pedagogy.—The special advantages offered by the oral method.—Articulated language and its value in comparison to the language of action.—Articulated language as a bond of sociability and as a means for human improvement.

The efficacy, and hence the greater fitness of a method in comparison with others, must result first of all from the results obtained from its practical application. We have seen in the preceding chapter how, in the education of the deaf, predominance was given now to this, now to that of the methods already defined, which seemed to the educators to give, in various circumstances, the best results. As, however, the judgment of the different educators on this subject was always subordinated to relative and subjective circumstances, the story of our pedagogy does not offer us a decisive criterion by which to give here any conclusions. It seemed to some that one might legitimately conclude that the mimic system was the most suitable for the instruction of the deaf, because it was the most widely diffused. But the adoption of that method, if one considers well, in connection with the historical development of our teaching, was not always preferred because better *in itself* than the others, but only because it was easy to practice with little preparation on the part of the teacher, and because it was adapted to the simultaneous instruction of many pupils. In fact, it was enough to find a man

---

1 From the Manual of Prof. Ferreri for the Teachers of the Deaf "Il Sordomuto e la sua Educazione." Pedagogia, Vol. I. Chap. VIII. Page 95-198.

of good will, and some sort of a room, to be able to found an institution for the deaf. Hence the success of the mimic system; success increased by the fact that each believed he was giving a religious instruction to the deaf when he succeeded in learning the manual alphabet and in making more or less spiritual gestures, accompanied by grimaces now pathetic, now severe, according to the matter explained. In short, the mimic system was more fortunate than good, as it was well adapted for making people believe that the deaf could succeed by its means in being instructed in matter relatively difficult; it is even today regarded kindly by those who desire to come to the aid of the abandoned deaf. To this circumstance we must ascribe the fact that it was the mimic system which took the first place in generalizing the instruction of the deaf, first in Europe, immediately after the opening of the school in Paris, and then in the colonies and missions of the other parts of the world.

In the historical part of this study, we shall see how the courageous spirit and "the inflexible will of Samuel Heinicke had to struggle to preserve the precious inheritance of the oral method against the perils which menaced it from the west."

Laying aside now every preconceived idea as to the worth of the methods we have seen applied in the instruction of the deaf, let us pass on to examine the fitness of the oral method and the possibility of its application in our schools.

The deaf-mute, as expressed by the word itself, unites in himself two serious defects, the one of which is the cause of the other. Now, because of this reason of causality, that defect which constitutes the first cause of this grievous misfortune must be the one to be principally noticed; that is, the one to which it would be necessary to pay the greatest attention. But it is not so. For the deaf it has happened as it usually does in the world of natural phenomena. In these it is generally the effects which call the attention to the research of the causes of the physical facts, and these causes are not always to be discovered. At the present day it seems evident and unnecessary to reflect that the cause of dumbness is, in the majority of cases, deafness. Yet much time was necessary before this knowledge was admitted into public opinion. For public opinion, as is shown from the

word *mute* alone being used almost always to designate the deaf-mute, regarded the deaf-mute, in fact, as an unfortunate being because he could not speak. This shows how they placed his misfortune more in the effect than in the true cause. And the appearance seemed to justify the fact. Of the two defects which constitute the complex phenomenon of deaf-mutism, the first is not so noticeable as the second. We perceive indeed that an individual is "*mute*" before knowing that he "*does not hear.*" In short, the deaf are distinguished by their lack of speech, just as the blind are by their lack of sight. For this reason the first instructors of the deaf directed at first their efforts to speech; for this reason the first means applied for the instruction of the deaf was articulation; for this reason, also, those who afterwards had recourse to other means recognized that, all things considered, "it is the lack of speech" in the deaf which prevents him from taking an active part in human intercourse. It was too evident a fact that the deaf, even when they had reached a notable degree of culture, always remained—without speech—isolated, apart by themselves, and this was not well. All the means which are used for the instruction of the deaf, except articulated speech, tend, in fact, to separate them from society. And notwithstanding the fortunate diffusion of the mimic system and of the manual alphabet, the prophecy of the French abbot has been fulfilled, when he wrote that: "all the world would not be disposed to make their thoughts run from their fingers for the convenience of the deaf."

If then the society of speakers cannot go to the deaf, the deaf must go to the society. But this is only possible by means of the oral method. With the oral method properly applied, as based upon the scientific knowledge of the functions of the vocal organs, and according to the process devised by the teachers of artificial pronunciation, one puts the deaf-mute in a condition to produce speech, making his own organs of respiration and phonation active. But by means of this the deaf would only be conducted half way; he must also reach the comprehension of speech as spoken by others, understanding it from the movements of the visible parts of the vocal organs of him who speaks. Now this double object is attained by one and the

same process of teaching. The deaf learns the elements of the spoken word by using, under guidance of the teacher, his senses of sight and touch. Thus production and perception of speech are two acts intimately and reciprocally connected, and a little continuous and graduated application is enough to reduce sight to be the habitual stimulus of the deaf, just as hearing is the natural stimulus of the speech of hearing people.

Here lies the essence of the oral method, and also its value and importance as a means for the sociability of the deaf.

The oral method, however, was not always so understood. Hence its poor success, which in the lack of results took away the courage, faith, and constancy of many educators of the deaf, who returned to the old method of the French school after the poor success of their first attempts.

Many of the educators, especially in the first historical period of our pedagogy, did not hold lip-reading in just consideration; indeed, sometimes they did not take any care of it at all, but instead had recourse to other auxiliary means, which besides rendering almost impossible any communication of the deaf-mute with his own family and neighbors, made the oral method unnatural, and speech became an accessory almost entirely neglected. Given these circumstances, it is not surprising that the oral method did not give the practical results which were anticipated and promised in theory. One should note also that it was this lack itself which brought discredit on the oral method every time that they applied it in union with others. Given the circumstances of the peculiar conditions of the deaf-mute and his strong tendency towards economy of attention and of the use of his vocal powers, when one offers him other means for the perception of speech (dactylology, writing and the mimic), the education of the sight becomes neglected entirely, and lip-reading becomes impossible.

It is therefore a great merit of the modern school to have established with its congresses and its didactic works the process now delineated by the oral method. The German school had not succeeded in doing this, for although it was opposed from pedagogic-didactic principles to the French school, still it admitted the mimic as an auxiliary to speech. We read in the

critical historical work of M. Hill that "just as the Neo-German school prohibits the use of the so-called artificial means for developing the intelligence, so it is far from denying to gesture (mimic language) a suitable place in the instruction of the deaf, and from excluding the use of it absolutely." [1]

Granted therefore that the results of the oral method were frequently compromised by the concomitance of other means sought for outside of speech and from the insufficient preparation of the educators, let us see what are in reality the advantages which render the oral method the most fitting for the instruction and education of the deaf.

The greatest advantage of the oral method over every other is so plain as to persuade every one without need of long and elaborate disquisitions. The deaf-mute taught the art of speech, and who has learned to speak himself, and to understand the speech of others from the movements of the lips, is capable of entering and taking an active part in the society of those who speak. It is a question of habit on his part, as well as of those who approach him, to learn to lessen the harshness of his speech in an æsthetic sense. In a short time the parents, relatives, friends, and acquaintances, and all who approach the deaf-mute, will accustom themselves to understand his speech without difficulty, although inharmonious and unadorned. This is a fact, and is of such great importance for the social life of the deaf-mute as to almost exceed the other advantage by means of which the warmest advocates of the oral method demonstrate and prove its excellence. The greatest advantage of the oral method, wrote Tarra, "appears from its being the most suitable means for his (the deaf-mute's) radical instruction, for his moral redemption, by the development of his intellectual and moral powers." In fact, it is rationally presumable that when one succeeds in excluding from the use of speech every kind of sign in which the phantasmagoric element predominates, we shall obtain exceptional results in the development of the intellectual powers in the instruction of the deaf. The advocates of the mimic system must soon

[1] M. Hill, Der gegenwartige Zustand des Taubstummen-Bildung-Wesens in Deutschland. Weimar, 1866.

see this who concentrate all their attention on writing as the most exact means for teaching language.

Another advantage of speech lies in the fact, still denied by some, that articulated speech does not leave the deaf chilled in the communication of their affections and sentiments. This would occur, if, as erroneously judged sometimes, the teaching of speech to the deaf was reduced to a material, mechanical process. But when language is taught in a manner intimately associated with the mental conceptions, it acquires for the deaf, as for the hearing, the highest psychic value of language thought, and of the living expression of the soul, which must be intimate and felt. Now, the articulated word is the most intimate language and the most felt which can be given, as that which corresponds to the needs of human nature, having in it the physical-physiological character, in respect to the organism which produces it, and that ethic-psychic one in respect to the immediate translation of the idea which arises or communicates itself. In fact, the spoken word, while it can associate itself with the expression of the face, and with the spontaneous movements of the whole body, remains always immaterial and incorporeal, and is therefore the most fitting expression of abstract and spiritual ideas.

When therefore the deaf-mute succeeds in restraining the phantasmagoric element in favor of the purely intellectual element, the result is that he thinks and feels and wills in the same manner that these acts are produced in individuals endowed with all the senses.

On the other hand it is true that those who live with the adult deaf, even when educated, find him somewhat lacking in the life of affection. But the reason of this phenomenon must be sought for in the profound gap left by his early education in affection. The maternal caresses, even when not entirely lacking, did not have one-half the significance nor the value for him that they have for the hearing child. These children hear them accompanied by loving language which educates the heart and makes an impression on the mind. "Silence," writes Tarra, "is such a deep void that it cannot be filled, and nothing can substitute the comfort of the communication of the heart by means of the lips."

In social relations, therefore, the oral method is the most fitting and advantageous for the deaf, as it is the most suitable for his intellectual and moral culture. This will be shown even more clearly by the comparison which we have yet to make between articulated language and the language of action.

"Articulated language"—thus Augusto Conti defines it—"is a series of vocal sounds used by human society to express their needs." This series of vocal sounds, however, which constitute language, are not natural signs of their ideas, but are arbitrary signs. This is demonstrated by two facts: first, from there not being any resemblance between the idea and its sign; secondly, from seeing one and the same idea expressed in different languages with different words. The truth is that as the relation between the articulated sounds and the ideas is arbitrary, so also the methodic system of the signs may acquire the essential qualities of a language, and give to the mind as many different signs as there are ideas. De l'Epée aimed at this end, and his followers succeeded, as we know, in instructing the deaf with a language of action.

Comparing, however, the utility of these with that of articulated language, it is clearly shown, says Balmes, that the utility of this is much greater than that of gestures. The voice lends itself, in fact, to reflections of combinations which the gestures cannot imitate. And the word, as Beccaria observes, (Trattato dello Stile), does not present the idea only, but, together with it, more or less some other additional images. This advantage is perhaps lost by the deaf who reads from the lips, because sound is perhaps the true source of these additional images. However for him remains the simplicity and spirituality which give to speech the advantage of excluding every accessory material.

Another inestimable advantage of speech over gesture lies in the circumstance that these render conversation in the dark impossible[1]. This shows how natural the correspondence is be-

[1] I have seen some cases of deaf-blind-speakers with whom one could communicate with a mimic *sui generis*, of which the substantial part was formed by means of the manual alphabet. In this case it is equivalent to being in the dark even for the hearing interlocutor. But these are exceptions.

tween the organ of speech and that of hearing. But from the moment that the relations between the signs of articulated language and the things signified is arbitrary, it is evident that no one can learn it without being taught by others. One must not conclude from this, however, that neither is speech natural to man, but only that the using of one articulated sign or another does not depend on nature. For this reason the poet sings:

> **"A natural action is it that man speaks;**
> **But whether thus or thus, doth nature leave**
> **To your own art, as seemeth best to you"**
> —*Dante. Par. XXVI. 130. Longfellow's translation.*

We have seen that man in his insufficiency as an *infant* expects everything from his family and from society, and that these come to his aid until he becomes self-reliant. To arrive at this stage of life, man has also need of being instructed in order to render him capable of individual reflection. Now, sufficient is provided for this need by means of articulated speech, which is the strongest bond of sociability, as the language of a whole people is the most powerful bond of nationality. Let us see how this happens.

First it is necessary to distinguish between the idea and true language, which consists in understanding clearly the nature of the thing; the one is acquired by intellectual perception, the other by reflecting upon the ideas acquired, and it cannot be formed without internal speech. We have seen already how the language does not succeed in expressing the thought adequately, it having been already observed that this perception, of which the symbolical sign is in some cases suitable, depends upon the possession which the thought has taken of itself, by means of the instrument of spoken language. Man is therefore a speaker, because naturally sociable, or, as Aristotle observed: "the only speaker among the animals." And as a man who lives outside of society is regarded as a sad phenomenon, thus there never could be a time when men should not need language for the exchange of their sentiments, needs, affections, and thoughts. Sociability and speech are therefore two properties which in man are summoned in turn, because they are derived from his quality of a reasonable being, and are the fundamental condition of the

perfectibility of the human individual, as well as that of the human family.

It is speech, indeed, which places us in reciprocal communication with our fellow creatures: by it the most delicate and simple relations of ideas are transmitted to us; without it the human mind would be shut in upon itself and would not carry to others more than a very small part of what it experiences and feels. Without speech civil and political relations would never have been established, and domestic society would be limited alone to the preservation of the species; that is, to purely an animal end, as occurs with the brutes.

But speech does not limit itself to the communication of spirits between themselves, but is also the strongest bond of the ideas, not only to fix them and to remember them, but also to connect them in judgment and reasoning; hence one must consider speech as an instrument of great value for the interior development of thought.

Speech is for the spirit a kind of tablet to which one can have recourse when one needs to recollect, to arrange and clear the ideas. Associated sometimes with a single word, the memory will preserve the remembrance of long operations and only by pronouncing this word, or reading it, or hearing it one feels his mind developing that series of knowledge which was acquired by the experience of long years, and in which one finds condensed the fruits of the acquisitions of all humanity. Because language responded to so many necessities of the spirit it was necessary that it should be, as the articulated speech is, such a sign as to be disposable at any instant, and which should also be susceptible of infinite modifications for expressing the varieties, the gradations, the categories and the different and most variated kinds of ideas.

To all these the organ of speech lends itself readily; with the greatest possible facility and rapidity it performs all the movements necessary for the infinite combination of sounds. The mechanism of speech, the great facility with which it responds to the commands of the will, clothing the thought with sensible form, is such a marvellous thing as to justify, to a certain point, the old philosophic opinion that language was necessary to

thought, and that one could not think without speaking, internally at least. Who could note the time which passes between the conception of the thought and its spoken expression? If then we reflect at the whole function of speech, it appears to us the most marvellous expression of the being of man. Think for a moment of an orator who speaks to a numerous audience. How many ideas of every kind are communicated at the same instant to the minds of all the hearers! The sensible and the insensible; the simple and the complex; judgments, reasoning, comparisons, analysis, synthesis, all is expressed with the same facility of mental conception. A thought arises in the mind of the orator, and in the same instant it is clothed in a sensible form by his lips, and communicates itself to the minds of his hearers!

However this series of operations is effected, it was necessary that the thought was conceived, that the will moved the organs of speech to clothe it sensibly, that the sensible form found in the air an uninterrupted conductor, that vibration in vibration should penetrate into the external ear, and from this to the ways of transmission and perception, which are established from the center to the brain center, in that mysterious correspondence which connects the intellectual activities between them; that the intellect finally sees in speech, so perceived, the index of the idea, and that this index in unlimited number, in inexpressible variety, in gradations and nuances the most subtle and delicate, in abstruse combinations, with a reciprocity of sentiments of a thousand kinds, establishes a communication of ideas and affection between him who speaks and them who listen, as between two solar rays which carry to us from a great distance light and life. And all this work is not the privilege of the learned. Whosoever enjoys the integrity of his senses and of their organs is at the same time active and passive in the admirable function of the spoken word.

It is not therefore an hyperbolical affirmation to say that articulate speech is the most natural means and the most suitable for human improvement. One may also say more, that as "the greater perfection of the being consists in the power of producing other beings similar to himself," so in speech lies the perfection of the human intellect, which in it and for it reproduces its conceptions.

CALCUTTA SCHOOL FOR THE DEAF.

EDITOR OF THE ASSOCIATION REVIEW.

Dear Sir:—You have asked me to give my many American friends a little glimpse of me and my work through THE REVIEW. I gladly accept your invitation, but of myself I can only say that I am doing my self-imposed but pleasant duty right loyally and with, I believe, fairly good results.

It will be six years, next August, since I returned to India from the west. During all this time we have been strenuously at work to have a local habitation of our own. These six years saw the country passing through two most severe famines—famines not only unprecedented in their severity, but also in bringing the antipodes together—for it seems wonderful how the sufferings of such far off people touched the chord of sympathy of your hearts, and you sent us timely and princely help out of your abundance. With famine and plague around us, and with our extreme poverty, it has been no easy task to raise subscriptions, but still we have been so far successful that we collected money enough to acquire for £3,333 a plot of land measuring about two acres, and the foundation stone of the building was laid by His Honor Sir John Woodburn, K. C. S. I., Lieutenant Governor of Bengal, on the 8th of April last.

You will probably ask me what method of teaching we follow in our school. Well, we call our school an oral school, and we are, I believe, right, as the accepted sense of the term goes—yet it is not strictly oral. We believe in the oral method of teaching, but we have a class where natural gestures are most freely used. I think I should explain what I mean by natural gestures. We have no systematic system of conventional signs such as you call the sign language. Nor have I as yet been successful in adopting the finger spelling to our letters of the alphabet, for there is a peculiar way of sometimes joining two or more letters together in writing and then the combination looks alto-

gether like a new character. But what we do in this class is to freely use living and explicit actions and gestures—a great deal much more than would be allowed in an orally taught class—in explaining things. The regular instruction of the class is done by and in writing and in articulate reading. Some of the pupils do speak some, but not much. It is a class composed of pupils who have failed to respond to the oral method of teaching. Pray, do not misunderstand me. I have told you what we are doing, but nothing is further from my mind than to enter into a discussion upon the subject of the method of teaching. India is not ripe for that yet. But as history repeats itself, the old controversy of the New Continent may appear in our midst in a new garb of language when India has got a large number of schools for the deaf. Whatever the method of instruction may be, I would welcome a new school in any part of India. Indeed, not long ago I had a call from one Mr. Jacob Burkhard, a member of the American Mennonite Mission in Dhamtara, in Central India. The mission has got together about 600 famine orphans, amongst whom there are about a dozen deaf-mutes. The mission authorities thought of sending them to our school; but I advised Mr. Burkhard to start a school for them in their own mission, for I had no manner of doubt that the generous patrons of the mission would help him in his laudable enterprise, and in the course of a few years he would have a large school. Mr. Burkhard knows finger spelling and something of the sign language, and his school, when it comes into existence, will be a manual school.

Then we follow what is known as the word method. We begin by teaching words and not elements. For this purpose we have collected together a list of very simple words—words easy of articulation and of very common use. When a pupil has learnt, say fifty words or so, he is also given short and easy sentences. These sentences are in no wise grammatically arranged, but such as represent simple ideas without any regard for time or person. Let me explain: We do not teach him "I run," "you run," "John runs," or "I jumped," "John jumped, etc. All persons and time are promiscuously used to suit the occasion. That is, we do not wait to use the past or future tense until the pupil

has got some fair idea of the present form. Of course this is for beginners. But as they advance in language we draw their attention to differences of time, person, etc., and to the elementary rules of grammar. Later on, primers and elementary readers, used in ordinary schools, are placed in the hands of the third and fourth year pupils. Henceforward their education, generally speaking, coincides with that of hearing children.

I may call our school a mixed school in that we have both boarders and day-scholars. This makes matters very awkward and hard for us, for the day-scholars are generally very irregular. Our task is made still more difficult by our not having any fixed time for admission. We admit new pupils whenever they come.

There are 200,000 deaf-mutes in India. In the presidency of Bengal alone they number no less than 70,000. Of these we have only thirty-four in our school, with five teachers, including myself. Of my assistants, one is a lady who teaches the girls, of whom there are seven in the school. Our national sentiment will not admit of boys and girls being taught together.

Our school has just entered into the tenth year of its existence. The school course is for ten years, but there is not a single pupil left who came to us in 1893, when we opened it. Of the pupils who have left the school, some have gone to the Government School of Art, one has been apprenticed to a photographer, two have become goldsmiths earning a decent living, and one has got a position as draftsman in the office of the Surveyor-General of India. Besides giving ordinary school education, we teach them freehand drawing, wood-engraving, and tailoring.

J. N. BANERJI.

Calcutta, India.

VICTORIOUS AMERICA.[1]

G. FERRERI, EX-VICE-PRINCIPAL OF THE SCHOOL FOR THE DEAF, SIENA, ITALY.

An Italian writer, who visited the United States at the time of the Cuban war, sent a series of interesting articles to Italy for publication in a newspaper. Afterwards he collected these articles in a book, with the title: "*L' America vittoriosa*" (Victorious America !)

I am visiting this country, as you know, for quite a different purpose, and in time of peace; but I also have the intention of writing a report in order to give an answer to my European colleagues who wish to know what the United States is doing for the education of the deaf. Well, every time that I think over my future report, I cannot free myself from the suggestion of that title, "*L' America Vittoriosa!*" Yes, America is victorious also in national educational work, because here the instruction of all citizens is provided for, and, before all, of those who cannot become useful citizens without a special education.

Although I am now in a good condition for making comparisons, yet I am not quite sure of being able to express in words my particular impressions. However, I do not wish to lose this opportunity for expressing my general impression that, in regard to the education of defective children, in Europe we are idealists, while in America you are practical. As great a difference, you see, as that which lies between "to be or not to be."

In Europe we speak and write much—too much, perhaps—and we have the best ideas and the finest theories on the general education of the child, and particularly of the deaf, as well as of

[1] A paper read at the Minneapolis Meeting of the National Educational Association, before the Department of Special Education, July 11, 1902.

the feeble-minded; but we have not the means to put these ideas and theories into practice. Here I find the contrary. The Americans put into practice our ideas, and they make every effort to do it well. In Europe we have a large and rich special literature on the education of defective children, but there I have never seen put into practice, so largely and liberally, the suggestions of science in regard to the care and education of these children as is done in every state of this American Union. And here I find also the best schools for the deaf.

When I say this to my European colleagues they will certainly ask me also for the reasons of this great difference.

During my journey from Boston I was reading the "American Notes" of Rudyard Kipling. At the end of the first chapter the author observes that "In America money is everything."

You know better than I with what wit and meaning Kipling made such an observation, but I am glad to complete the sentence, saying, if not with wit, at least with truth: In America money is everything, because only with money is it possible to put into practice the theories; and this is true of every kind of knowledge and energy. What else but the lack of material means prevents the majority of the civilized nations from spreading the benefits of primary instruction? Money is in this case the first and fundamental condition; and I could illustrate my proposition with a quantity of facts and comments. But I am sure of not exaggerating when I say that, comparatively speaking, there is not another country in the world where so much money is spent for the national education as is done in the United States. More than this, while money is certainly of fundamental importance, I must add another reason. I have had many opportunities to realize that in America there are, besides money, also the best moral means. Among them I am glad to enumerate the following ones:

1. A great sympathy and active charity for all unhappy children.

2. A strong desire and great energy for putting into practice what science suggests in order to help them.

3. Intelligence, training and study in those persons who are called to teach in and direct the special institutions.

Therefore, to the inquiry of my European colleagues: What are the Americans doing for the education of the deaf? I can answer without any hesitation: They are doing the best which it is possible to do in the present condition of science; and in a not far distant future they will be our guide in the progressive development of our special line of education. "Victorious America!"

THE NATIONAL EDUCATIONAL ASSOCIATION MEETING.—DEPARTMENT OF SPECIAL EDUCATION.

SECRETARY'S MINUTES.

FIRST SESSION.—Wednesday, July 9, 1902.

The Department was called to order at 2.30 p. m. in the Hennepin Ave. Methodist Church, Minneapolis, Minn., with Dr. Alexander Graham Bell, President, in the chair.

A vocal solo by Mrs. Maud Ulmer Jones, accompanied by Miss Margaret Gilmore, introduced the regular program of the Department.

Dr. C. M. Jordan, Superintendent of Schools, Minneapolis, Minn., delivered an address of welcome, which was responded to by the President, Dr. Alexander Graham Bell; United States Commissioner of Education, Dr. Wm. T. Harris; and Prof. Augustus H. Kelley, Boston, Mass.

PRESIDENT'S ADDRESS.

We have arrived at an important and critical period in the history of the Department. This Department originated with the teachers of the deaf—the blind and feeble-minded had no part in the original plan; they were brought in as a concession. For many years teachers of the deaf had felt an isolation, and they had a feeling that they wanted to come into affiliation with other teachers of the country that they might gain something of value from them. But when, on their first application to the officials of the National Educational Association, they found that they could not be received as a Department for the Deaf, because all other special classes would ask to be likewise set off, others were included with us, and we were labelled with the name, "Deaf and Dumb, Blind, and Feeble-Minded." Thus we were consti-

tuted of incongruous elements, with little in common. Teachers of the deaf did not like these associations, nor did teachers of the other classes. They did not wish to be known as defectives, or classified by a defect. A number of names were proposed for the Department, but none seemed to fully satisfy. Finally, at the Detroit meeting last summer, a committee was appointed, consisting of the executive officers of the Department, to reorganize the Department and to make effort to have its name changed. This committee acted and it adopted the following platform:

1. The name of the Department shall be: Department of Special Education—relating to Children Demanding Special Means of Instruction.
2. The object of the Department shall be to bring persons engaged in the education of children requiring special methods of instruction into contact and affiliation with teachers in general for the interchange of ideas for mutual benefit.
4. All communications shall be non-technical in character for the purpose of securing an interchange of ideas between those engaged in general and those engaged in special education.
4. To secure from specialists papers of general interest for presentation to the general Convention or its Sections.
5. To secure from prominent educators the presentation of papers before this Department.
6. All matters to be presented at any meeting shall be approved in advance by the Executive Committee.

At a meeting of the Board of Directors of the Association, yesterday, the request for the change of the name of the Department was presented, and it gives me pleasure to announce that the request was granted by unanimous vote. So we are now and will hereafter be known as the "Department of Special Education."

The special idea of the Department is to secure an interchange of ideas. Heretofore our papers have been technical—teachers of the deaf have written addressing themselves to teachers of the deaf, and the teachers of the blind to teachers of the blind, etc. But teachers of the deaf, and blind, and feeble-

minded, have their own conventions for all this. At this moment the teachers of the blind are having a convention, and our Vice-President is now absent in attendance at that convention, unable thus to be present.

Now we don't want at our meetings papers that may be presented by special teachers at their own conventions. The first object of the Department is that our members may attend the meetings of other departments, and when we have anything technical we should address other departments. We don't want to talk to our own kind of teachers; we want to speak to public school teachers.

There is one special point on which we can all come together. A large number of pupils are in the public schools who have defective sight, or hearing, or are backward. The number having defective hearing probably outnumbers the total deaf-mute population. These pupils are not deaf enough for special schools. What is done with them, or for them ? They are drifting along in the public schools, and teachers do not know what to do with them. Now, can't we, who teach the totally deaf, can't we give you information who are teaching the partially deaf ? And the teachers of the blind and of the feeble-minded, can they not help teachers who have children in their schools who are partially blind, or who are backward. This Department should give special attention to these pupils.

The basal idea of this Department is an interchanging of ideas between specialists and ordinary teachers. So when we listen, we want men, not specialists like ourselves, but some great, broad men to come to look down upon our little fields, like Dr. Butler, and Dr. Harris whom we have with us today. It used to be that schools for the deaf were shut off from all affiliation with other schools, but now we are graduating our pupils into the public schools. Columbia College, New York, has the distinction of having graduated the first congenital deaf student. And now, at the last commencement, Harvard University graduates three deaf men. These men received their preparatory training at the Horace Mann School for the Deaf, Boston, and Clarke School for the Deaf, Northampton. We are progressing in these matters, and the line of progress is for affiliation be-

tween special schools and their work with the ordinary education system. There is no limit to which the blind cannot aspire, and it is beginning to be so with the deaf, and with the deaf-blind, as witness the case of Helen Keller, both deaf and blind, and yet now successfully pursuing a college course among the hearing and seeing.

Dr. Wm. T. Harris, United States Commissioner of Education.—It seems to me that this meeting will be considered an epoch, not only to teachers of the deaf, of the blind, and of the feeble-minded, but to teachers of all other classes of children. I enter heartily into Dr. Bell's plan by which mutual benefit will result to special and general teachers alike. The special teacher focuses his mind on special difficulties; then invents methods and devices by which the difficulties are removed. Then he gives papers relating to these devices, and general teachers learn for their own uses.

There are various defects over which we must lift our pupils; if they are not attended to the children become morose and disheartened. What a stream of reforms will come in the methods of the land through the meetings of this Department and through hearing your papers. A visit to a school for the feeble-minded in Lincoln that I once made, was worth more to me than much that was gained from normal study of normal children. The will power is a necessary factor to be used to develop the intellect, and the feeble-minded child is especially lacking in will power. He is trained upon the line of his lack. Control of the will is the first step; this taken, other steps may be taken in education.

The German poet gives answer to the query, "What makes life worth living?" Life is worth living if you can only do something by which you can make others better. This body by specializing will systematize the matter by lifting defective children over the threshold of difficulty. Then by detailing their methods to general teachers, they multiply twenty fold and more the great benefits they confer.

Prof. A. H. Kelley, Boston, Mass.—I remember with what delight I listened to Dr. Bell at the Horace Mann School, where the product of the work is the same as in our fields in a different way. I am asked to speak of Helen Keller, but about all that can be said of her has been said by Dr. Bell in speaking of her and of the three deaf young graduates of Harvard. The work being done by special classes is in line with what you are proposing in this Department. In my district in Boston I have one of these special classes, and we have adopted the name of your department. We have, in fact, three of these classes. Why not more? It is exceedingly difficult to secure just the right kind of teachers to lift these children over the threshold of difficulty of which Dr. Harris speaks. Our method is to visit—with the teacher—the homes of parents. I picked up little Harry S., nine or ten years of age, ragged and out at the toes. I turned him over to one of our bright, sympathetic teachers. I took her to his home and found a younger brother, even more defective. We took Harry and the little brother away from home to Waverly, where they are being cared for and trained. But these children in with other children are stumbling blocks of the class. What are they doing? Something with their hands—what is the psychology of this? The better way of doing is setting the children to working with their hands. We must develop the motor power of the brain before the other powers. A child, as long as his teacher sat by, could do anything he was asked, but without the teacher he would do nothing. We decided we must have something else, and we brought in the manual training bench, the saw, the plane, etc. At once the boy was happy: something was brought into his life that meant happiness.

I believe this is one of the grandest movements that has been started, and Dr. Bell's name will be handed down as one who has done much to bring into these darkened lives light, and new power and new life. Dr. Bell has asked the question if we have statistics as to the proportion of pupils that have defective powers. To a certain extent they have been collected, but not to an extent such as to give definite facts. But the start is being made. With sixty pupils in a room, in order to do good work, they ought to be pretty much alike. If we could only get classes

down to normal size, the work could be more specialized. We have made request of teachers that they send us names of all pupils considered as defective. Upon these cases being investigated, some are found not sufficiently defective; the others are segregated. "What effect has such an inquiry upon parents?" I am asked. We get around that by adopting the names—special school, special teacher, the latter specially qualified, avoiding the name feeble-minded in any connection.

Upon motion of Dr. J. C. Gordon, of Jacksonville, Ill., the Secretary was authorized and directed to send a telegram to the Convention of Instructors of the Blind, in session at Raleigh, N. C., conveying greetings, with a cordial invitation to participate thereafter in the proceedings of the Department.

A paper was read by Mr. F. W. Booth, editor of the ASSOCIATION REVIEW, Mt. Airy, Philadelphia, on "The Lesson to be Learned by the General Teacher from Teaching Language to the Deaf."

Music—Vocal solo, Mr. D. Alvin Davies.

Mr. James N. Tate, Superintendent of the School for the Deaf, Faribault, Minn., read a paper on the subject, "What Minnesota is doing for her Deaf Children."

This was followed by a paper by Mr. B. P. Chapple, instructor in the School for the Blind, Faribault, Minn., on "What Minnesota is doing for her Blind Children."

Dr. A. C. Rogers, Superintendent of the School for the Feeble-Minded, Faribault, Minn., next addressed the Department on "What Minnesota is doing for the Feeble-Minded."

The President, upon motion of Prof. W. D. Parker, State Inspector of Schools for the Deaf, Madison, Wis., appointed the following committee on nominations: Prof. W. D. Parker, Dr. J. C. Gordon, Dr. A. C. Rogers, and Mr. J. J. Dow, Faribault, Minn.

Miss Cornelia D. Bingham, Principal of the McCowen Oral School, Chicago, Ill., gave illustration of work with pupils of the school present.

On account of the lateness of the hour and the brevity of the exercises just witnessed, it was decided to devote Thursday morning to the presentation of school work by the children of the McCowen School.

Thursday, July 10, 1902.

A special session of the Department was held on Thursday morning from 9.30 to 12 oclock, during which time Miss Cornelia D. Bingham, Principal, assisted by Misses Andrews, Cannon, Pearse, Taylor, and Freedman, gave an exhibition of school work with thirteen pupils of the McCowen Oral School, Chicago, Ill. The exercises covered four grades, from the kindergarten to the advanced work of the school, and were witnessed by a large and interested audience.

Second Session.—Friday, July 11, 1902.

The Department convened at 2:30 p. m., Dr. Bell, President, in the chair.

The President suggested that a committee on resolutions be appointed, and a motion in accordance with the suggestion was passed. The following named persons were appointed as the Committee: Dr. Joseph C. Gordon, Jacksonville, Ill.; Mr. J. J. Dow, Faribault, Minn.; Dr. A. C. Rogers, Faribault, Minn.; Miss Alice Damon, Mystic, Conn.; Miss Jennie C. Smith, Eau Claire, Wis.

Music.—Vocal solo, Miss Inez Adell Davis, accompanied by Miss Eualie Chenevert.

The following telegram, received from the Vice-President of the Department, Mr. Edward E. Allen, attending the Convention of Instructors of the Blind, in session at Raleigh, N. C., was read: "Blind Convention endorses report of Committee on Reorganization. Congratulations."

The President introduced Signor G. Ferreri, ex-vice-principal of the Siena, Italy, School for the Deaf, who addressed the Department, giving his impressions of the work of instruction of the deaf as carried on in American schools.

A paper on "The Organization of Associations of Parents of

Deaf Children as an aid to Schools," was read by Mrs. Helen M. Hefferen, President of the Illinois Mothers' Congress.

Discussion followed, participated in by Dr. A. Graham Bell, Prof. W. D. Parker, State Inspector of Schools for the Deaf, Madison, Wis., Senator Stout of Wisconsin, and Miss Mary McCowen, Supervising Principal of the Day Schools for the Deaf, Chicago, Ill.

Dr. A. Graham Bell, the President.—There is no other thing more important than this of bringing the parents of deaf children into close touch with the work being done for their children. There are associations of parents in Boston, Chicago, Milwaukee, Los Angeles, Halifax, Cincinnati, and other places. Why should there not be associations of this kind in connection with the public school work? Mrs. Bell took up the work of organizing an association at Baddeck, Nova Scotia, and it has been of inestimable advantage to the Baddeck Academy. Why should there not be an association of parents in connection with every public school in the country?

A member stated that there was such an association in St. Paul.

W. D. Parker, State Inspector of Schools for the Deaf, Madison, Wis.—Some years ago there was organized in Milwaukee what is known as the Phonological Society in connection with the school for the deaf. This society has extended its work and influence to other cities in Wisconsin, and there are now in successful operation eighteen day schools for the deaf in the state, a number of them with parents' associations as adjuncts. There should be encouragement to the idea of joint effort of parent and teacher in the education of the child.

Senator Stout, of Wisconsin.—We should bear in mind that our school work will go much better if we interest the parents in that work. The school house door should be open to parents at all times. More than that, school boards and teachers should meet frequently. Finally, it should be on the program that the school children should visit the industries of the town.

Mary McCowen, Supervising Principal, Chicago Day Schools for the Deaf.—We began organizing parents in Chicago as a matter of necessity. The hours of the children, before and

after school, had to be utilized for the benefit of the children, so we had to bring in the parents. We taught them *how* to help the deaf children out of school. In our meetings we taught the mothers by questions and answers. After the first six months the mothers organized local mothers' classes. We have nine local mothers' classes in Chicago. They hold meetings at various times—some on Sunday as the only time possible. In some districts the parents are mostly foreigners, some not understanding English, or seeming not to. But we talked to them and soon we found that they did understand.

In our day schools we have the long summer vacation. We have started vacation schools—and they are very popular. Parents contribute money, several hundred dollars, for their support. In one of our day schools the hearing children have organized a club to assist the little indigent children.

The next paper presented was by Mr. James J. Dow, Superintendent of the School for the Blind, Faribault, Minn., on "Necessary Evils."

This paper was discussed by Prof. H. R. Sanford, of New York, Dr. A. Graham Bell, Prof. W. D. Parker, Miss Jennie C. Smith, Principal of the Day School for the Deaf, Eau Claire, Wis., and Mr. J. N. Tate, Superintendent of the School for the Deaf, Faribault, Minn.

Prof. H. R. Sanford.—In cases of otherwise perfect hearing but of imperfect utterance, is the defect somewhat like color-blindness?

Dr. A. Graham Bell, the President.—As a general rule the defect is a mental one, and usually such children are suitable for the feeble-minded school. However, I visited the day schools for the deaf of Wisconsin and found there had come into them some children of this kind.

Prof. W. D. Parker.—There are eight children of this kind in the schools, all being benefitted.

Miss Jennie C. Smith, in charge of the Day School for the Deaf, Eau Claire, Wis.—I had two cases of this kind.

Dr. Bell.—The trouble is we learn to speak by the poorest process of imitation.

J. N. Tate, Superintendent of School for the Deaf, Faribault, Minn.—I suppose that every superintendent of a school for the deaf has had children come to him who are dumb because of some mental defect. They do not belong to us because they are not normal mentally.

A paper by Miss Mary McCowen, Supervising Principal of the Chicago Day Schools for the Deaf, on "A Comparison of Kindergarten Methods for the Deaf and the Hearing Child," was followed by exercises by the four grades present of the McCowen Oral School, Chicago, Ill., under direction of Miss Cornelia D. Bingham, Principal, and her assistants.

Business Meeting.

The Department at 5.30 o'clock, Friday afternoon, at the close of the regular program, continued in session as a business meeting. Prof. W. D. Parker, chairman of the Committee on Nominations, presented the following report:

For President—Edward E. Allen, Overbrook, Pa.

For Vice-President—Mary McCowen, Chicago, Ill.

For Secretary—Miss Sarah Fuller, Boston, Mass.

Upon motion the report was accepted and the persons nominated were elected.

Dr. J. C. Gordon, chairman of the Committee on Resolutions, presented the following report:

Report of Committee on Resolutions.

The Committee on Resolutions, to which were referred all resolutions, report the following, and unanimously recommend their adoption:

1. *Resolved*, that this Department approves of the action of the Board of Directors, changing the name and defining the scope of the Department, and recommends the adoption of the report of the Committee upon Reorganization, which is as follows:

> 1. The name of the Department shall be "Department of Special Education—Relating to Children Demanding Special Means of Instruction."

2. The object of this Department shall be to bring persons engaged in the education of children requiring special methods of instruction into contact and affiliation with teachers in general, for the interchange of ideas for mutual benefit.

3. All communications must be non-technical in character, for the purpose of securing an interchange of ideas between those engaged in general and those engaged in special education.

4. To secure from specialists papers of general interest for presentation to the general convention or its sections.

5. To secure from prominent educators the presentation of papers before this Department.

6. All matters to be presented at any meeting shall be approved in advance by the Executive Committee.

2. WHEREAS, the usefulness of this Department in its work calls for information and statistics gathered systematically, from a large field; and

WHEREAS, it is desirable that this information be made available at the next meeting of the National Educational Association,

Resolved, that a committee be appointed and authorized to confer with the National Bureau of Education, with a view to securing a compilation of existing statistics relative to children in the public schools who need special methods of instruction, and the gathering of more complete returns from the large cities of the United States.

3. *Resolved,* that the efforts of the school authorities of the city of Boston to provide special instruction in special classes for pupils whose mental development is impeded by such physical conditions as partial deafness, imperfect sight, etc., is worthy of commendation.

4. *Resolved,* that the graduation of persons deaf from birth or from early childhood, with academic degrees from Harvard, Yale, Columbia, and the University of California, as well as from Gallaudet College for the Deaf; and of blind students from many colleges, is worthy of note by this body as an encouragement to high endeavor on the part of pupils and teachers alike.

5. *Resolved,* that the larger and freer use of written language and of speech, from year to year, by pupils in schools for the deaf is a progressive step worthy of note and of commendation.

6. *Resolved,* that day schools for young deaf children, with efficient teachers and competent supervision, should be encouraged, especially for such children as cannot be reached by institutions or boarding schools, which, with their manifold advantages, cannot cover the entire field in many states.

7. *Resolved,* that the thanks of this Department be extended to Wm. T. Harris, LL.D., U. S. Commissioner of Education, and other prominent educators who have addressed this Department, also to the local committee of arrangements, and to the ladies and gentlemen taking part in the musical program, also to Miss Cornelia Bingham, for the living exhibit from her school in Chicago, and to Dr. A. Graham Bell, LL.D., our President, for invaluable services rendered to this Department.

Respectfully submitted,

(Signed) J. C. GORDON, *Chairman.*

Upon motion the resolutions were adopted by the Department as read.

In conformity with the second resolution the President appointed Mr. F. W. Booth, editor of the ASSOCIATION REVIEW, as the committee to compile and gather statistics relative to children in the public schools who need special methods of instruction, to report at the next meeting of the National Educational Association.

Upon motion the Department adjourned.

Department headquarters were maintained throughout the sessions of the National Educational Association at parlors 222, West Hotel.

An interesting and impressive exhibit of products of the industrial work carried on at the School for the Feeble-Minded, Faribault, Minn., was shown in the parlors of the Hennepin Avenue Methodist Church.

The occasion of a dinner given on the evening of Friday, July 11th, at the West Hotel, to members and friends of the Department, by Dr. and Mrs. A. Graham Bell, was rendered doubly enjoyable and memorable by the fact of its being the twenty-fifth anniversary of Dr. and Mrs. Bell's wedding day.

F. W. Booth, *Secretary.*

REVIEWS.

Clarke School for the Deaf, at Northampton, Mass., August 31, 1901.

The President of the Corporation, Franklin Carter, acknowledges with thanks the action of the Board of Education in increasing the annual allowance for each pupil in the school to $250, a sum which, however, is still more than thirty dollars less than the annual per capita cost for care and instruction. He makes an earnest plea for compulsory education for the deaf, from which we make the following extract relating to the rights and the duty of the State in such connection:

"If the State stands ready to pay for the instruction of deaf children many times the cost to the towns and cities of the teaching of normal children, it may be assumed that the State fully recognizes a duty to the deaf child. In view of this recognition, has not the State the right to say that every deaf child within its own borders, not otherwise efficiently taught (unless sickness or disability other than deafness makes it impossible), shall be made to share in the benefits of its provisions? Or has the tenderness of parents for the unfortunate boy or girl, the reluctance to commit the one especially dear because of this infirmity for so many months in a year to unknown guardians, any validity in the face of the great enlargement of vision and power that the instruction will bring to the child? Is this not a relation in which an ignorant and fond parent may blight the normal life of one dependent on him, and thus greatly limit the service to the community of one possibly gifted in some direction? Ought not the state to suppress vigorously a sentimentality so mawkish that all true perspective as to the significance of love and duty, discipline and power is lost?"

Mr. Carter also speaks of the importance of at once placing in a school for the deaf those who lose their hearing after arriving at school age in order that they may not, through neglect, lose the attainments in speech, language and mental growth already made. That this plea is quite disinterested, is shown by the fact that the Clarke School has its full complement of pupils and therefore would not be benefited by such a law as is suggested.

The Principal states that no radical changes were made in methods of instruction, but there is abundantly indicated in her report the steady, healthful growth that the profession has come to expect of her school. We note that more special drill in speech-reading was given to young children with satisfactory results; that there was more systematic training of the hearing power retained by some pupils; and more extensive use was made of blue-prints, the Perry pictures, and pen and ink drawings to illustrate the pupils' lessons.

Rassegna della Educazione dei Sordomuti [Review of the Education of the Deaf], Naples, No. 4, April; No. 5, May; No. 6, June; Nos. 7 and 8 (in one), July and August, 1902.

No. 4, April: "The Education of the Deaf in Foreign Countries" contains an account of a visit made by Prof. G. Ferreri in the schools for the deaf in England. This account is limited to the Normal School of London, where Mr. Van Praagh has practiced for many years the oral system with the best success. A humorous article of Folchetto still treats the well-known question of the Royal Institute for the Deaf in Rome. The purpose of the Volta Bureau, for the increase and diffusion of knowledge relating to the deaf (Washington), is well explained in a letter from G. Ferreri to the Editor of the Rassegna. Among the miscellany we read an important notice about the good intention of the Minister of Public Instruction to present to the legislative chambers a special bill for the increase of the education of the Deaf in Italy.

No. 5, May: C. Lazzerotti, a teacher in the Royal Institution for the Deaf at Rome, reminds his colleagues, in a short

and poetical article, of the proposal made at the last Congress of Rome to meet again at Naples. E. Scuri gives an account of the last numbers of the French Revue Generale, making some just observations on the teaching of articulation. G. Ferreri publishes regularly a review of the American magazines on the education of the Deaf. A special library has been instituted by Prof. Scuri, as first Vice-President of the Italian Association of the Teachers of the Deaf, in order to provide the colleagues with pedagogical, scientific and literary books. This library is dedicated to the name of Prof. Pasquale Fornari, late Director of the Royal Normal School of Milan.

No. 6, June: "For the Hearing of the Deaf," is an article by G. Ferreri, who gives a particular account of his personal impressions about the use of the Akoulalion in some American schools. Prof. Ferreri is not convinced of the utility of the instrument, and takes the occasion to reaffirm his opinion, expressed some years ago when he went purposely to examine this subject at Vienna. His conclusion is the same: "With the children who possess an appreciable remnant of hearing, the best results of the auricular system are those obtained by means of the natural voice." The "Hermit of Maggiate" renews his complaints against the public and official examinations of the Deaf, which only give a false idea of our educational work. "A Proposal for the Tutelage of the Deaf" is made by Prof. G. Ferreri. The writer accuses the Legal Medicine of partiality in taking into consideration on the subject of criminality among the Deaf, only the crimes *of* the Deaf themselves, and neglecting those crimes committed by so-called normal persons *against* and *with* the Deaf. The proposal is suggested to the author by the frequent cases in which the process in law against those who attempt the honor of the Deaf is arrested by the ignoble influence of money or social position.

Nos. 7 and 8, July and August (in one), is as follows: "The Project of a Law for the Instruction of the Deaf in Italy," by E. Scuri, Director of the Royal Institution for the Deaf, at Naples: It appears that the project of this law prepared by Minister Nasi does not contemplate compulsory education of

the deaf, but shows, to compensate for this omission, a broad and wide foresight in the arrangement of the courses of instruction. As soon as the Italian Parliament shall have passed this, or some similar law, we shall make it the subject of a more extended notice. "Helen Keller," by G. Ferreri: Mr. Ferreri gives an account of several interviews he had with Helen Keller at Washington, to whom he was introduced by Mr. John Hitz, the Superintendent of the Volta Bureau. Mr. Ferreri was deeply impressed by Miss Helen Keller, as appears from his account, in which he says: "The impression which I received at my first interview with Helen Keller, was so suggestive and peculiar that I cannot express it in words. To do justice to the subject, I ought to wield the pen of an Emerson or Maeterlinck. I must, therefore, refrain from reproducing mental impressions and confine myself to mere externals." At Cambridge, Mass., Mr. Ferreri had the pleasure of inspecting Helen Keller's library, to see her work on the type-writer and attend lectures at Radcliffe College. "First Reunion of Austrian Teachers of the Deaf," by Romisto di Maggiate: At this reunion Mr. John Kraft, Director of the Institution at Dobling, near Vienna, stated, among the rest, that in order to guarantee to the deaf an education and instruction as perfect as possible, the following conditions should be complied with: 1. The course of instruction in all institutions must be 8 years at the very least (better still 9 years); 2. The Government should provide special training of teachers of the deaf, especially as regards pedagogics; 3. There should be a uniform method for all institutions. 4. The Government should provide all text books and educational material. "Drawing in Schools for Deaf-mutes," by S. Rossignani.

Smaablade for Dovstumme [Leaflets for the Deaf], 12th year, No. 85, Copenhagen, Denmark, July, 1902.

"The Deaf Congregation at Copenhagen:" As stated in a previous number of the ASSOCIATION REVIEW, the hope of this congregation to obtain a house of worship was disappointed. The Minister of Ecclesiastical Affairs and Education, however, informed the Bishop of Zealand, to whose diocese this congre-

gation belongs, that for the coming fiscal year the sum of 1000 kroner [$268.00] would be allowed to the congregation from the Public Treasury, divided as follows: 520 kroner for traveling expenses of the pastor, 300 kroner for rent of a church, and 180 kroner as salary of an organist. "The Mutual Feeling of Authority in the Deaf-Mutes," by C. Becker (continued from a previous number): Although the deaf have their proper authorities among the hearing people who have come in contact with them, they ought not to give the hearing persons more trouble than their peculiar circumstances cause; and if they nevertheless do this, there is evident need that they should have natural authorities among their own number, to whom they can look up, and whose advice and recommendations they can follow. The great question is, who shall be selected for such positions. There are deaf persons in Denmark who occupy prominent positions; but they are either too proud or lack the ability to undertake the work. It will, therefore, be the duty of hearing persons to procure for us our own natural authorities who have both time and ability to work for their fellow deaf, and to whom, owing to their elevated social position, the great mass of the deaf may look up with due respect. "The Norwegian Agricultural School for the Deaf": A great many people are of the opinion that it is better for the deaf to learn some trade and come to the cities where they meet other deaf with whom they can have intercourse, whilst in the country they are frequently oppressed with a sense of their loneliness, and become melancholy or actually lose their minds, of which there have been several instances. These objections, however, cannot be supported by the actual facts. In the first place, the deaf who leave our institutions at the present time are much better prepared to have intercourse with hearing persons than was the case in former times, and there is, consequently, not near as much danger as formerly that they will become lonesome; and in the second place, work in the cities is constantly harder to procure, as there are in most of the Norwegian cities more mechanics than are needed and can earn a decent livelihood; and as in all fields of employment there is a strong and growing competition. The deaf should, therefore, be encouraged to attend the agricultural school. Work on a

farm, in company with hearing persons, is, so far at least, much easier to procure; and the labor in the open air will make the deaf healthier and happier, and in the long run more independent than they could ever be in the crowded cities.

Blatter fur Taubstummenbildung [Journal of the Education of the Deaf], Vol. XV., Nos. 11, 12, 13 and 14; Berlin, June and July, 1902.

"Utilization of the Remnants of Hearing" by R. Brohmer (Weissenfels): This question has been discussed for some time by teachers of the deaf, a few being of the opinion that, as suggested by Dr. Bezold of Munich, a great deal more attention should be given to the remnants of hearing, whilst the majority do not share these views. It is too early to reach a definite conclusion. The results of the investigations which have been set on foot at various institutions will, however, have real value only if the investigation has been conducted in the right manner. From the experience at the Weissenfels institution it seems advisable that the following course should be pursued: 1. The children who are supposed to possess some remnants of hearing should be examined by an aurist by means of the continued series of sounds. 2. Teachers of the deaf—not physicians—should make an examination by speech, and should carefully note what sounds the children are able to hear prior to the beginning of the exercises. 3. The character of the speech of each child should be ascertained by teachers of the deaf by obtaining replies to the following questions: *a.* What is the general sound of the speech? *b.* To what degree are the different vowels clearly pronounced? *c.* How is, as a general thing, the pronunciation of the consonants? *d.* Which vowels are pronounced imperfectly? *e.* Is the speech fluent? *f.* How is the articulation? and *g.*, the enunciation? *h*, Is the speech, as a general rule, intelligible? This process should be repeated at certain stated intervals, to ascertain whether there has been any change? Dr. Bezold's experiments, as given in his interesting work, "The hearing capacity of the Deaf" (Wiesbaden, 1896), will in all cases serve as a safe guide, as he shows which of the continued series of sounds are still heard, in other words which portions of the

acoustic apparatus are still intact; and as he has ascertained how long each sound is heard by a deaf person, and instituted a comparison between this length of time and that during which a normal ear hears a sound.

The objects which are to be reached by utilizing the remnants of hearing are self-evidently the following: 1. To start normal activity at the ends of the acoustic channel. 2. To develop the sensorial centre. 3. To develop the motorial centre; and 4. To promote a smooth and distinct pronunciation.

Among the "Miscellaneous Communications" we note a report from Leipzig where the General Association of the Deaf recently held a very successful memorial festival in honor of Samuel Heinicke, who in 1778 founded the first German institution for the deaf, at Leipzig. One of the features of the celebration was the performance by deaf actors of two classical German comedies, the first by pantomime, accompanied by the reading of the text by a hearing lady; whilst in the second piece the spoken language was used by the actors. The large and intelligent audience loudly applauded both performances, and the leading theatrical journal of Berlin, which was represented at the celebration, considers both performances a full and genuine success.

"The Different Forms of Muteness and Aphasia," by Dr. H. Gutzmann, Berlin. A paper read at the meeting of the Association of Berlin Teachers of the Deaf, December 14, 1901: Dr. Gutzmann starts out with the idea that it is important for teachers of the deaf to clearly distinguish the various forms of muteness and aphasia. So far, no attempt has been made to classify these various forms. By "muteness" Dr. Gutzmann understands those forms of lack of speech where this defect showed itself already during the period of development of the speech, or where there never was any speech; whilst by the term "aphasia" he understands cases where, after the faculty of speech had been fully developed, disturbances of different kinds led to loss of speech. In observing the pathological phenomena accompanying the various forms of muteness and aphasia, it may be said that all forms of muteness must be considered as obstacles stopping the natural development, whilst all forms of

aphasia are disturbances occurring at a later period. The stopping of the natural development of the speech may be caused in at least three different ways, viz: 1. By a cessation of the action of the senses (hearing, sight, touch); 2, By the anomalous heightening of the sensations of the nerves; 3, By disturbances which hinder the effect which the stored sensations exercise on the development of the motorial centre of speech.

The various forms of *aphasia* may be grouped as follows: 1. *Cortical sensorial aphasia:* disturbances of the sensorial center of speech, loss of ability to write freely, to write from dictation, to comprehend writing; whilst the faculty of mechanical copying has been preserved. The understanding of spoken words and the ability to speak after others, are lost; mistakes in speaking will also occur. 2. *Sub-cortical sensorial aphasia:* The disturbances of speech are the same as in the first group; there are no mistakes in speaking; whilst the written speech has been left entirely undisturbed. 3. *Trans-cortical sensorial aphasia:* There is no understanding of spoken words, but the faculty to speak after others has been preserved. Mistakes in speaking will occur. The understanding of written speech has been lost. Reading aloud without understanding what is read and writing in all its forms are preserved. Only in spontaneous writing mistakes will occur. 4. *Cortical motorial aphasia:* The faculty of speaking spontaneously and after other persons is lost; the understanding of speech remains undisturbed, all forms of reading and writing, with the exception of mechanical copying, are lost. 5. *Sub-cortical motorial aphasia:* the disturbances of speech are the same as under 4. The faculty to read aloud has been lost, whilst writing in all its forms and the understanding of writing has been preserved. 6. *Trans-cortical motorial aphasia:* spontaneous speech is lost. The faculty to speak after other persons and the understanding of speech are maintained, whilst spontaneous writing has been lost, writing from dictation, copying, reading aloud, and understanding of writing remain undisturbed. We have given the above extracts from Dr. Gutzmann's essay, not because we deem his remarks of great practical use, but simply as one of the first attempts at a scientific classification of muteness and its various causes.

"Natural Science" in Schools for the Deaf," by J. Kerner (Essen): A very exhaustive treatise on the question how much and in what manner should natural science be taught in schools for the deaf. After speaking of heat, its causes and its spread, the currents of the air, etc., the author speaks of the winds and their causes. To illustrate his method we quote the following: "Light this candle! Open the door a little! Hold the candle in the upper part of the opening—the room being heated—and the flame of the candle is blown toward the outside. What is the cause of this phenomenon? The current of warm air which passes out of the room. Hold the lighted candle in the lower part of the opening, and the flame is blown inward. What is the cause of this? The cold air which streams in from the outside? Then follow: the currents of the sea, steam, fog, clouds and rain, snow, hail, dew, hoar frost; finally steam and its force, and the steam-engine, the atmosphere, the balloon, the diving-bell, the pop-gun, the bellows, the suction-pump, the fire engine, etc., etc., all treated in the same practical way.

Among the "Miscellaneous Communications" we note: "A Household School for the Deaf in Finland": A school of this kind was opened at Loimijoki in the spring of 1901. Its object is to educate deaf girls to become competent servants. The founder of this school, or rather this "home" is Miss Wialen, formerly teacher at the school at Abo, who has established it at her own expense. Miss Wialen has endeavored to distribute the instruction and work according to the capacity of each girl; thus one has charge of the stable containing seven cows, another has charge of the chicken yard, another has to do all the cleaning and scrubbing in the house, another the cooking, etc. From time to time one girl is transferred from one field of labor to another, so gradually they all take their turn at all household duties. In their free hours the girls can spin, weave, sew, knit and mend. In the heavier work such as washing, baking and brewing, all take part. We would mention here that to prepare (brew) a wholesome home-made beer is counted among the female accomplishments in most of the northern countries of Europe. The mental development of the pupils is not neglected, and for an hour every evening and on Sundays Miss Wialen

engages her pupils in helpful conversation on secular and religious subjects. All of Miss Wialen's pupils have been selected from the very poorest classes, and whilst they are at her home she amply supplies them with clothing, shoes, etc.

The legislature of the Grand Duchy of Baden (Germany) in its sessions of June 20 and 21, 1902, by a large majority passed a resolution to establish a new Institution for the Deaf (the third in Baden) near Heidelberg, and appropriated the necessary money for buying a suitable lot and for starting the course of instruction. In this new institution partially deaf pupils shall be instructed separately from the totally deaf.

From the 21st of May till the 4th of June a course of instruction and information for aurists and teachers of the deaf was held at the Central Institution for the Deaf at Munich, Bavaria, and was attended by 31 persons, from Bavaria, Wurttemberg, North Germany, Austria, Hungary and Japan. Dr. Bezold delivered lectures on the examination of the deaf, relative to remnants of hearing, by his continued series of sounds; Dr. Wanner on the anatomy, physiology and pathology of the organs of speech; Dr. Koller on his method of teaching speech.

Nordisk Tidskrift for Dofstumskolan [Scandinavian Journal of the Instruction of the Deaf], T. Göteborg, Sweden, Nos. 5 and 6, 1902.

"Report of J. Wallin to the Swedish Ministry of Public Instruction on his Journey and Visits to Various Institutions for the Deaf:" This is the first of the series of articles, and gives an account of the German institution at Schleswig (under the Danish Government till 1864, when, after the war between Denmark and Germany, the Duchies of Schleswig and Holstein were ceded to Germany), and the Danish Institutions at Fredericia and Nyborg. The Director of the Schleswig institution is Mr. August Engelke, who has labored at this institution for a long number of years, first as a teacher and then as its Director. Although 70 years of age he is in the full enjoyment of his health and strength, and is at his post from early morning till late at

night. The institution has both boarders and day scholars; the number varying between 64 and 72. The annual expense of a pupil at Schleswig is between 600 and 700 mark ($142.80 to $166.60). The salaries of the teachers vary from 2,100 to 3,800 mark (about $500 to $900). Pupils are received at the age of 7 or 8. The number of hours of instruction, including gymnastics, is from 36 to 39.

The majority of teachers are gentlemen, only two ladies being among the number. Here, as throughout Germany, there appears to be considerable prejudice against female teachers. It is thought that, as a general rule, women are not strong enough physically to stand the wear and tear incidental to a teacher's position. The method employed at Schleswig is the pure speech-method, and the course of instruction embraces reading, writing, arithmetic (6 hours a week), history, geography, natural history, physics, manual work of various kinds, and gymnastics. Religion is likewise taught, during the last two years 6 hours a week. There is in the Province of Schleswig-Holstein an association for the support of the home for aged and infirm deaf, connected with the Schleswig Institution numbering 28,175 members. The expenses of this home for the fiscal year 1899-1900 were 7,441 mark ($1,770.95), all contributed by members of the Association.

The Danish Institutions for the deaf at Fredericia and Nyborg: The instruction of the deaf in Denmark is compulsory since 1817, and work among the deaf has been carried on ever since 1798. The development of the Danish schools for the deaf has been phenomenal, and in many respects they have been the pioneers for the whole of Scandinavia. The Director of the Fredericia Institution is G. Jörgensen, and of the Nyborg institution G. Forchhammer, both exceedingly able and energetic men. At Fredericia, which is the principal institution, children of school age are taken in from all parts of the kingdom. The first year they spend in the preparatory class. At the end of the year they are divided into those who are only deaf, who are sent to Nyborg, those who are deaf and cannot speak at time of admittance, who remain in Fredericia and are subdivided in two divisions, and backward children who are sent to the sign-school

at Copenhagen. About 25 per cent. go to Nyborg and 20 per-cent. to Copenhagen. The consequence is that Fredericia has a pure unmixed school of deaf pupils, subdivided according to their ability. The classes are therefore particularly even, i. e. the pupils in each are all, as nearly as possible, of the same capacity. The Fredericia Institution can record most excellent results. Fredericia has both boarders and day-scholars, about evenly divided. Nyborg has only day scholars, and Copenhagen only boarders. A peculiar arrangement at Nyborg and Fredericia is this, that in all the recitation rooms the walls above the wainscoting are painted a slate color, so that they can be used for writing thereon with chalk, to which use they are put very extensively.

Mr. Jörgenson at Fredericia is a thorough believer in the old adage of a sound mind in a sound body, and that bodily exercise will render the pupils mentally brighter. A great deal of time is, therefore, devoted to gymnastics, walks, games, bathing, work in the garden, manual and household labor. Once a week the girls in the two highest classes help the women in the homes where they are placed, with cooking, and also accompany them to the market.

From the "Miscellaneous Communications" we learn that in 1901 there were in Prussia 456 teachers of the deaf. Of these 10 were upwards of 65 years old and 18 between 65 and 60. Of these 28, 17 were directors of schools. The average age of a Prussian teacher was 42½ years, and the average length of service 22 years.

In Germany there is a law according to which teachers are responsible for any injury which their pupils inflict on themselves or on others during the time they are under the teacher's care. In order to protect themselves the teachers have been compelled to take out policies in accident insurance companies with the special understanding that in case of accidents to the pupils the company pays the indemnity. During the last six months of the year 1901 such insurance was paid in 34 cases. In not less than 15 cases indemnity was paid on the ground of real or alleged injury caused by bodily punishment of pupils.

A course of preparatory instruction for deaf children between the ages of 3 and 7 will be opened in Göteborg, Sweden, on the 1st of September, 1902, in some of the infant schools for hearing children. Instruction will be imparted by a teacher specially appointed for this purpose. The expenses will be met by the interest of a fund of 61,000 kroner collected for this object among the people of Göteborg and the neighborhood.

Il Sordomuto e la sua Educazione [The Deaf and his Education], Siena, I. Vol. (Pedagogy)—Second Edition—1902; II. Vol. (Didactic), 1895; III. Vol. (History), 1896.

We give here above the title of a manual for the teachers of the deaf, which Prof. Ferreri published in Siena in the years 1895-96. The work is divided into three volumes. The first one (Pedagogy) contains XV. chapters and an appendix on the results of the instruction of the deaf in regard to the teaching of language. This volume has been published now in its second edition and we are very glad to give to our readers the translation of the eighth chapter in the present number of our REVIEW hoping that this specimen will show the value of the Italian work.

The second volume (Didactic) is divided into three parts: I. Articulation; II. Language; III. Other subjects of instruction.

In the first part particular attention is given to the word physically considered. The author indicates: (a) the preliminary exercises for articulation; (b) the rules for the teaching of the elements of the words and of the various sounds: simple vowels; combinations of vowels; simple consonants and combinations of consonants; (c) the rules for the phonetical unity of the word in the combination of several sounds, from the simple syllable to the complex sentence. He shows afterwards the means through which the deaf are accustomed to speech, and the various grades of teaching.

The second part is a complete study on the theoretical and practical relation between the thought and the word. Particular

chapters are dedicated to lip-reading, and to the means of teaching the language (objects, pictures, actions, and scenes from real life, dialogue, occasional teaching, writing, reading, etc.) In regard to the grammar, a special study is made on the absolute and relative value of the word in speech as a theoretical introduction to the teaching of the morphology of the syntax and of the figurative and real signification of the words and of the phrases. Finally, rules are given for the graduated teaching of composition and of the use of familiar and vernacular language.

The third part consists of a chapter only, divided into four paragraphs. The author premises that every subject in a school of the deaf is a matter for the teaching of language and observes that, when the deaf knows the language, everything can be taught to him without difficulty. Therefore the rules for the teaching of religion, history, geography, arithmetic, etc., are the same as those of the common schools, only with the difference of the extension of the programmes.

The third volume is the History of the Instruction of the Deaf from its origin to our days.

The author could consult the most important publications on the subject issued in Spain, in England, in France and in Germany. He gives in this volume the criticism of the first works which appeared in those countries from the XVI. century. A comparative study is dedicated to the French and German schools in order to show the reasons of the diffusion of the various systems in the education of the deaf. A large historical account of these systems in France, in Germany and in Italy shows the progress of the oral method in Europe in the period 1830-1880. The last chapter (XIV.) contains a summary exposition of the present state of the education of the deaf in the various countries of the civilized world.

The manual of Prof. Ferreri, as well as many other of his writings upon the education of the deaf, is diffused among the educators of Italy who follow its rules in practical teaching and it is also much prized in some foreign countries by those educators of the deaf who, being familiar with the Italian language, can consult it with great advantage.

Das Taubstummenbildungs-Wesen im XIX Jahrhundert in den Wichtigsten Staaten Europas. Ein Ueberblick uber seine Entwickelung.—Im Verein mit auslandischen Vertretern des Taubstummenfaches herausgegeben von Johannes Karth, Lehrer an der Taubstummen-Anstalt zu Breslau. Breslau, 1902. Verlag von Wilh. Gottl. Korn. [The State of the education of the deaf in the XIX century in the most important countries of Europe. An outlook over its development. Edited by Johannes Karth, a teacher in the institution for the deaf in Breslau, in union with foreign representatives of the education of the deaf].

This is a fine volume of 428 pages containing an historical exposition of the development of the instruction of the deaf in the most important countries of Europe. 179 pages are dedicated to Germany—*a tout seigneur, tout honneur!*—and it is really the case to say: *"Germania docet."*

Karth's work is well worthy of taking its place near that of the book: "Geschichte des Taubstummen-Bildungswesen," published in 1882 by Ed. Walther, the Principal of the Royal Institute for the Deaf in Berlin. Yet, we can say that Mr. Karth's study completes that of Mr. Walther, because it is always true that in historical matters the more authoritative voice is that of posterity. Mr. Karth's work gives us a well ordered, retrospective view of the development of the special pedagogy of the deaf in Prussia and Germany, saying very little about *people* and much about *things*; hence the great importance of his work. There are two chapters, subdivided into various articles, which give in their titles alone a clear idea of the contents: 1. On the external development, or the material organization of the education of the deaf; 2. On the internal development, or the theoretical and practical development of the German school in its three grades corresponding with the names of Heinicke, Jäger and Hill. In regard to the other countries of Europe, which have contributed to the development of the pedagogy of the deaf, Mr. Karth asked his colleagues of the various nations for information, and their reports are published *in extenso*, or condensed in such a manner that their monographies would be most adapted to the economy and plan of the book. The European countries are not classified according to their respective importance as to the education and assistance of the deaf, but

they come in alphabetical order, so that every subjective judgment or personal appraisal is eliminated.

Here is the list[1] of the countries, which shows their work in favor of the Deaf, with the indication of the author, or of the publication from which Mr. Karth condensed the necessary notices: Belgium—E. Grégoire, Berchene, Sainte-Agathe; Denmark—G. Forchhammer, Nyborg; Finland—V. Forsius, Helsingfors; France—Hamon du Fougeray, Le Mans; Great Britain—Dr. Eichrolz, London; Holland—Brugmans and Roorda, Groningen; Italy—G. Ferreri, Siena; Croatia and Slavonia—J. Medved, Agram; Norway—F. O. Guldberg, Christiania; Austria—G. Pipetz, Graz; Russian West Provinces—Migge, Mitan; Russia—Rau, Mosca; Sweden—F. Nordin, Wenersborg; Switzerland—Kull, Zurich; Spain—M. Pathoff, Madrid; Hungary—S. Varadi, Budapest.

In the conclusion of the book Mr. Karth gives the following interesting summary in which, as he says, "the figures speak for themselves," and which shows clearly the progressive development of the education of the deaf in Europe.

COUNTRIES.	Number of the Institutions for the Deaf in the year 1800.	At the end of the XIX Century (1900).	
		Institutions.	Pupils.
Germany	3	91	6458
Belgium	–	12	926
Denmark	1	3	400
Finland	–	8	483
France	2	63	3834
Great Britain	1	65	3073
Holland	1	4	504
Italy	2	47	2299
Croatia	–	1	46
Norway	–	5	309
Austria	2	25	1784
Russia West Province	–	6	269
Russia	–	20	885
Sweden	–	12	803
Switzerland	–	16	732
Spain	–	11	475
Hungary	–	8	492
Total	12	397	23772

[1] In the translation of the geographical names the alphabetical order is, of course, changed.

Revue General de l'enseignement des Sourds-muets [General Review of the Instruction of the Deaf], Vol. IV., Nos. 1 and 2, Paris, May, June, 1902.

May: "Why Do the Deaf Speak Badly?" by A. Liot. The author is of the opinion that this undoubted fact is due in great part to the hurried course of instruction, and advises teachers to proceed not only methodically but exceedingly slow in their articulation classes. The conditions which he considers indispenable for making the deaf speak well are the following: 1. No more than five pupils in articulation classes. 2. Make the teaching of the elements of pronunciation and syllabication the main points in instruction. 3. Do not allow the child to speak, except in the presence of the teacher, unless it is sufficiently sure of its organs. Mr. Liot states, in conclusion, that too great care cannot be exercised in the beginning. He would prefer to have a teacher of articulation let his pupils pronounce the vowels and consonants in too ornate a manner rather than be content with an approximative pronunciation. In a supplement, the article from the journal "l'Illustration" is concluded. Seven very excellent illustrations show the professor and his pupil engaged in teaching various sounds, viz.: 1. The sound "i", vibrations at the top of the skull, the position of the tongue. 2. The sound "n," vibrations of the nostrils. 3. "t," sensation of an explosion. 4. "f," slow whistling. 5. "pa," "p," sharp whistling; "a," vibrations of the larynx. 6. The professor correcting a wrong position of the tongue. A full page illustration deserves special notice. It represents a class in anatomy. The professor stands to the left with a human skeleton by his side, and twelve pupils, some standing and some sitting at their desks, eagerly follow his explanations with their eyes. As a life-like reproduction of a higher class of the deaf this picture can hardly be excelled. "Deaf Artists in the Salon of 1902:" As in former years, the Salon showed excellent work by the deaf in painting, sculpture, engraving, lithography, and decorative art.

June: "The School for the Deaf at Grenoble, founded and directed by Mr. Rauh," by B. Thallon. We here see the strange spectacle of a German—Mr. Rauh was born in Bavaria and finished his studies at the Normal School of Bamberg about the

year 1830—establishing in a French city a school for the deaf, which he directed from its foundation in 1841 till 1865, and where he instructed pupils according to the oral method. His school, founded by his own slender means and contributions from well-wishers, numbered every year from 15 to 25 pupils; and owing to his gentle but at the same time energetic manner, proved a great success from the very outset, and in its earliest stages already attracted the attention of the Minister of Public Instruction, who granted pecuniary assistance to Mr. Rauh, who, in the most devoted and self-sacrificing spirit, gave all his time and means towards this noble object.

This number contains an engraving showing the allegorical figure ornamenting the pedestal of the statue of Rochambeau, recently erected at the southwest corner of Lafayette Square in the city of Washington. All visitors to Washington will admire this grand and spirited work of art; and it will be all the more interesting to learn that it is the work of a deaf sculptor, Mr. F. Hamar.

Organ der Taubstummen Anstalten in Deutschland [Organ of the Institutions for the Deaf in Germany], 48th year, No. 6, Friedberg, June, 1902.

"A New Aid for the Instruction of the Deaf," by G. Forchhammer, Nyborg, Denmark. The ultimate aim of all schools for the deaf is the mental development of the pupils. In conection therewith, however, the speech-school has for its special object to train the pupils in speaking and lip-reading. The greatest hindrance in reaching this last mentioned object is found in the fact that the deaf can only read a comparatively small fraction of the sounds from the lips of the speaker. This lip-reading will, therefore, always remain more or less imperfect. If the deaf could see the inner organs of speech (tongue, palate etc.) as well as the lips, they could grasp the spoken word as well as hearing persons. With the view to remedy this defect, Mr. Forchhammer has constructed a system of positions of the hand, to indicate the positions of the inner organs of speech. In this

way the spoken word becomes just as visible to the eye as it is audible to the ear. Mr. Forchhammer states that, at the suggestion of Dr. Graham Bell, he has, with the view to the future publication of a pamphlet giving a full and detailed description of the system, taken a number of photographs of these positions of the hand indicating the more important sounds in several of the best known languages. Whenever this pamphlet appears, THE ASSOCIATION REVIEW will give an extended notice of the same. For the present it will suffice to confine ourselves to a few general remarks regarding Mr. Forchhammer's system: Whilst speaking, the speaker holds the hand before his breast in such a manner that the pupils, their eyes being fixed on the lips of the speaker, can at the same time distinguish the positions of the hand, of which the principal ones are as follows: The movements of the ligaments of the glossis are indicated by bending the wrist outwardly and inwardly. The movements of the palate are indicated by moving the wrist straight up and down; the positions of the tongue by half closing the hand and stretching out different fingers; the vowels by the thumb, and the consonants by other fingers; whilst the articulations of the tip of the tongue are, as far as possible, indicated by stretching out different fingers singly, e. g., "s" by stretching out the little finger, "l" the middle finger, etc., "n-d-t" by stretching out the fore finger. The articulations of the back of the tongue are indicated by simultaneously stretching out several fingers, and the consonant "r" by turning the hand. This so-called "hand-system" has been followed at the Nyborg institution for some time; and as the fear had been expressed that by this system lip-reading might be prejudiced, an investigation was made, in order to get at the absolute facts; and a comparison instituted between dictation from lip-reading and dictation from lip-reading accompanied by positions of the hand of the speaker. The result of quite a number of dictations was that in the upper class the dictations from lip-reading showed a percentage of 22 mistakes whilst there was only a percentage of 3—4 in the dictations from what we will term "combined lip and hand reading."

From the "Miscellaneous Communications" we glean the following: The Report for 1900-1901 of the Zurich (Switzerland)

Institution for the Blind and Deaf shows that this institution, which has been in existence for 92 years, fully meets all the requirements for instructing and educating the blind and deaf of the Canton of Zurich, but that there is great need of a separate establishment for weak-minded deaf and blind, who at present are in the same classes with other and bright pupils, and prove a great hindrance. The number of pupils is 55 in 5 classes. In Hungary, three new institutions for the deaf were founded in 1901, at Szegedin, Erlau, and Jolsva.

El Sordomudo Argentino. Revista Mensual. Organo del Instituto Nacional de Sordomudos. Ano II, Nos. 7 y 8, Mayo y Junio de 1902. [The Argentine Deaf-Mute. A Monthly Review of the National Institute for the Deaf at Buenos Aires. Argentine Republic. II. year. Nos. 7 and 8, May and June, 1902].

After a suspension of three years, we see with great pleasure the reappearance of this periodical, issued by Prof. J. P. Diaz Gomez, the valiant Vice-Principal of the National Institute for the Deaf at Buenos Aires. This publication is of great importance for the various states of South America, where the Spanish language is spoken. In the concert of spoken and written languages for the cause of the education of the deaf, one felt the lack of this language, which was the first in which the deaf were taught to speak. Here are the contents of the first number of the resurrected magazine: "El Sordomudo Argentino"—His Reappearance,—by the Editor; "A Letter from the Poet D. Carlos Guido y Spano"; "Psycho—Physiology of the Language of the Deaf in the Idiot and in Aphasic Persons," a paper by Dr. Horace G. Pinero; "L'Educazione dei Sordomuti," by J. Pablo Diaz Gomez; "The Speech of Many of the Deaf," as a principal point of accusation against the German system: contribution to the teaching of articulation," by P. Kopka. (Translated by Prof. G. Ferreri); "Psychology of Language," by N. R. D'Alfonso, (Translated by J. P. Diaz Gomez); "The Need of Protecting the Deaf Child before His School Age," by L. Moyzone; "The Acoustic Power of the Deaf," by G. Ferreri; Bibliography and Reviews of the periodicals; Foreign and Domestic News.

Under the latter title we read that the Government of the Argentine Republic has decided to give a secure management to the Institution of La Plata, the first of the provence of Buenos Aires (founded in 1857, but closed several times after the date of its foundation until last year).

One good effect of the instruction of the Deaf in Argentine has been the decision of the Government of the Uruguay Republic to open an Institution for the Deaf at Montevideo. For this purpose six lady teachers have been sent to Buenos Aires to be trained in the special teaching of the deaf, in the National Institution for girls.

Informe Presentado a la Direccion de la Escuela National de Sordmudos por el profesor Francisco Vasquez Gomez y dictamen emitido por la Comision respectiva. Mexico, 1902. [A Report presented to the Direction of the National School for the Deaf, by Prof. F. Vasquez Gomez, and the opinion of this report expressed by a special commission].

Two years ago the Government of Mexico directed Prof. F. Vasquez Gomez to visit some of the best schools for the Deaf in the United States. Prof. Gomez came to our country, and after seeing a few of our schools, made a report to the Principal of the National Institution for the Deaf in Mexico. In his report Prof. Gomez proposed some reforms, among which seemed less opportune those concerning (1) the adoption of the combined system; (2) the adoption of auricular teaching; (3) the abolition of the teaching of drawing.

All this resulted in an elaborate study of the report of Prof. Gomez, made by a commission. The special commission charged with this delicate task consisted of Prof. Luis G. Villa, Adolfo Huet and Representative Daniel Garcia. The conclusions of the commission, contrary to those of Prof. Gomez, were adopted by the Direction of the National Institution at Mexico, for the following general considerations:

1. The system of classification by different groups of pupils, proposed by Prof. Gomez, would require triple the number of teachers, and at the same time would cause confusion and disorder in the classes.

2. If the teaching of drawing and lithography were suppressed, the pupils would be deprived of one of the surest means of subsistence, because the majority of the old pupils of the National Institution live by the exercise of these arts—photography, lithography and painting.

Le Messager de l'Abbe de l'Epee [The Messenger of the Abbé de l'Epée], Currière, France, June 1st and 15th, July 1st and 15th, 1902.

In these four numbers of this excellent semi-monthly journal, we find, besides the usual accounts of institutions for the deaf in all parts of the world, several articles of a pronounced religious tendency, such as "The Heart of Jesus," "The Tree and its Fruits," which, in accordance with the aim and spirit of this journal, to care for the spiritual welfare of the deaf, elucidate religious truths in so simple a manner as to benefit even very young readers. In an article entitled, "The Marriage of the Deaf," the writer deems it his duty, owing to the many unhappy marriages, to point out the solemn character of the union between man and wife, and to warn the deaf not to enter the sacred state of matrimony, as is, alas ! so often done, in a light-minded and thoughtless manner. In glancing over these numbers of the "Messenger of the Abbé de l'Epée," we are more than ever impressed with the earnest, but at the same time kind-hearted and we may well say, fatherly spirit, which pervades its pages. To do good to his dear deaf children is the motto of Abbé Rieffel, the editor.

Tidning for Dofstumma [Journal for the Deaf], No. 3, 1902, Stockhom, Sweden, June, 1902.

This journal, which does not give many lengthy articles, but a great variety of communications from all parts of the world, and bright sketches, gives an account of the 25th anniversary

meeting at Stockholm on the 30th of June, 1902, of the Swedish Association of Teachers of the Deaf. From the reports it appears that the association has done much good during the 25 years of its existence, not only by strengthening the bond of union among the teachers, and by mutual encouragement in the performance of their important duties, but also by discussing many questions relating to the instruction and general welfare of the deaf. Special subjects of discussion at this meeting were, amongst the rest, the spiritual care of the deaf, the establishment of a journal for the deaf, and the pensioning of aged or disabled teachers. As regards the question of homes for aged deaf, the journal deeply deplores the fact that while other countries have a number of such institutions (Germany 12 or 13, the largest for 400 persons, Denmark 1, Australia 1), the poor and aged deaf in Sweden have to go to the poor house.

L'Echo des Sourds-Muets [The Echo of the Deaf] No 13, Paris, July, 1902.

We learn from this number that a Miss Sybertz who had for a number of years been at the head of a religious institution for the education of poor children, and who died recently, left the sum of 500,000 francs (about 100,000 dollars) to the National Institution for Deaf-mutes. It is encouraging to see instances of such noble benevolence even in countries where gifts to educational institutions are, on the whole, not as frequent as in this country.

National Geographic Magazine, August, 1902.

The two leading articles of this number are "Problems of the Pacific—The Commerce of the Great Ocean," by Hon. O. P. Austin; and "Shortening Time Across the Continent," by Henry Herbert McClure. There are also reports of the Fieldwork and of the Topographic Work of the United States Geographical Survey, in 1902, and the usual amount of valuable information under the headings of Geographic Notes and Geographic Literature.

OBITUARIES.

REV. THOMAS GALLAUDET.

REV. J. M. KOEHLER, M. A., PASTOR OF ALL SOULS' CHURCH FOR THE DEAF, PHILADELPHIA, PA.

"After he had served his own generation by the will of God, he fell on sleep."—Acts 13-36.

"In this our brother we have lost a man whose ministry has been a precious and beautiful fragrance, lasting consistently to the end, and as beautiful at the end as at the beginning."—Bishop Potter.

"His life was an inspiration."—Public Ledger.

The universal testimony to the character of our departed friend is so sufficiently expressed above that this sketch might end right here; but there is no risk of saying too much of one whose long and useful life so conspicuously adorned the doctrine of God by good works no less than by faith and love,—nor can one who knew him well and loved him more refuse to add a tribute of affection and esteem.

Thomas Gallaudet, Priest, Doctor in Divinity, Doctor of Humane Letters, was born in Hartford, Connecticut, June 3d, 1822. His father was the Rev. Thomas Hopkins Gallaudet, a Congregational minister, founder of public schools for the Deaf in America. His mother was Sophia Fowler, one of the first pupils of the Hartford School, whose unusual attractiveness of person and lovely traits of character soon won her teacher's heart and hand. From his parents Thomas Gallaudet inherited the characteristics that distinguished his life—qualities of mind and heart which have made the name of Gallaudet memorable in the annals of America.

Little is known of his early youth. However, from what we know of his character in maturer years we can easily imagine that he was a dutiful son, gentle, studious, devout, and of a lovable disposition.

He was early prepared for college, and desired to enter Yale, of which his father was a graduate, but finally went to Trinity, Hartford, whence he graduated with the Bachelor's degree in 1842, at the age of twenty.

For a year he taught in country schools near Hartford, and in 1843 he accepted a call to teach in the New York Institution for the Deaf. Speaking later of this period he said, "The example of my father, the training of my deaf-mute mother and my early associations, all predisposed me to enter upon my duties with genuine enthusiasm."

In 1845 he married Elizabeth K. Budd, a graduate of the New York School, to whom he had become attached while she was still a pupil. As he himself said, he was thus bound more closely to the people among whom God was fitting him to extend the Kingdom of Christ. Seven children were born to them of whom six are now living, five daughters and one son. Another son died in infancy.

Early in life he conceived the idea of systematic religious work among the adult deaf. This was doubtless suggested to him by the daily prayers and Sunday services inaugurated by his father in the Hartford School.

Soon after going to New York he took up the study of Theology in the Episcopal Church. How he became a Churchman is thus related: While visiting a relative he came across a Prayer Book bearing the name of an ancestor. Examining it he became interested with the result that he was confirmed. He was wont to say that "It was not I who left my ancestral Church but my ancestors who left theirs. I did but return to it." In 1850 he was ordained Deacon and a year later he was advanced to the Priesthood. Although feeling called to the ministry, he considered it his duty to continue teaching. In 1850 he began a Bible class for the adult deaf which grew so rapidly that he was obliged to seek larger rooms. Of this class he said, twenty-three years later, "We were laying the foundations of a superstructure of which we then had no conception." Yes, it is the building of "a workman that needeth not to be ashamed."

When he became a Priest, more definite thoughts of his future work came to his mind, although "the light dawned very

gradually." It was at the funeral of one whom he called "one of the most gentle and lovely of my deaf-mute friends" that he "resolved, with God's help, to try to found a church to promote the temporal and spiritual welfare of the deaf-mutes of New York and vicinity." His idea was to associate the deaf and hearing in one parish, and he soon found friends who encouraged him to make a beginning. The chapel of the New York University was engaged, and on the first Sunday in October, 1852, began a parochial life that, for fifty years, has been identified with the religious history of this country. The Parish grew rapidly, and in 1858 Dr. Gallaudet resigned teaching to devote himself to his religious duties. A year later the Church and Rectory so long known as St. Ann's, in West Eighteenth St., near Fifth Avenue, was purchased. A heavy debt ($50,000) was incurred, which the friends of the youthful pastor considered a crushing burden. His faith was supreme, however; and the prosperous growth of the Parish proves that the venture was more than reasonable. A few years ago the property was sold for two hundred thousand dollars, and the Parish united with that of St. Matthew's, in Eighty-fourth St. A new building was erected in One Hundred and Forty-eighth St. for the deaf congregation, which retains the name of St. Ann's. The Parish of St. Matthew is "pledged to support St. Ann's Church for Deaf-Mutes for all time." Dr. Gallaudet was Rector Emeritus of St. Matthew's and Vicar of St. Ann's. In 1859 he visited Philadelphia, Baltimore and various other cities in New York, New England and Pennsylvania, and gradually ministrations more or less regular were established at many points with the help of clergymen familiar with signs, and deaf lay-readers; and after St. Ann's had become self-supporting, it was felt that the work there should be supplemented and made more effective by promoting similar work in other parts of the country. Accordingly, in 1872, "The Church Mission to Deaf Mutes" was incorporated, with Dr. Gallaudet as General Manager. The plan was to make it a General Society with which all the missions should be affiliated. This was not realized, however, and the "Church Mission" is now limited in its operations to the Dioceses of New York, Long Island, and Newark. Elsewhere the missions exist independ-

ently under the different Diocesan authorities. However, the Society gave strong impetus to missionary work among the deaf all over the country.

One of the first important results was the ordination to the Diaconate, in 1876, of a deaf man, the late Rev. Henry Winter Syle, M. A., by Bishop Stevens of Pennsylvania. This ordination was the first of its kind in the history of Christendom and was not accomplished without strong opposition from Bishops, Clergy and lay-men. Bishop Stevens defended his course in a sermon which will always have a foremost place in literature concerning the deaf. A short time after, the Rev. A. W. Mann was ordained Deacon by Bishop Bedell of Ohio, who, by the way, had been a Director of the New York Institution and a staunch supporter of Dr. Gallaudet. Both Deacons were made Priests together by their respective Bishops in 1883. Since then seven other deaf men have received orders in the Episcopal Church and another is studying to that end.

Missions to the Deaf now reach into almost every Diocese of the Church. Ten clergymen are constantly employed, with some twenty-five lay-helpers. There are over two thousand communicant members. All Souls' Church in Philadelphia with over 300 communicants is the outgrowth of Dr. Gallaudet's visit in 1859, and from it sprang the mission in Central Pennsylvania with over 400 communicants. Grace Mission in Baltimore, with nearly 100 active members, and St. Thomas' Mission in St. Louis, with about as many, are other instances proving not only the results but the possibilities of Dr. Gallaudet's venture of faith. One of the itinerant missionaries, the Rev. A. W. Mann, whose field covers the vast area of the Middle West, has presented over 800 deaf-mutes for confirmation in his busy life of over twenty-five years and has a record of almost one thousand Baptisms.

Within recent years other religious bodies have taken up similar work, in many cases with good results. While deploring sectarian divisions and earnestly praying for a reunited Kingdom of Christ on earth, Doctor Gallaudet had no ill will for those who differed with him. Always deeply sensible of the rulings of Providence, he felt that the developments of his work in ways

which were not his own were evidences of the Divine Will and gratefully acknowledged it.

Among the monuments to his love and labors is the Home for Aged and Infirm Deaf Mutes near Poughkeepsie with which his name is intimately associated. As early as 1853 he foresaw the need of such a Home, but it was not until 1873 that his youthful forecast was realized. In that year the Home was opened, in a rented building in New York City, under the control of the "Church Mission." A systematic effort was made to secure funds for support and for the purchase of a location in the country, and in 1885 the Society was able to purchase a fine farm of one hundred and fifty-six acres on the banks of the Hudson River in the neighborhood of Wappinger's Falls. There was a commodious mansion of most attractive appearance and surroundings with room for fifty inmates. A considerable indebtedness was incurred in the purchase of this property, but the energy and enthusiasm of Dr. Gallaudet secured benefactions which not only extinguished the debt but largely increased the endowment fund. Two years ago the Home was destroyed by fire. Nothing daunted, the indefatigable founder, even then in "the shadow of the valley," set about rebuilding on a larger and better scale. The new building is about completed and is a noble testimonial to him who planned it. His great wish was to see his dependent family again located there. But this was not to be—he died on August 27, 1902. The future support of the Home is assured by its endowment; and it may be safely assumed that its founder's friends will never allow its work to be curtailed.

Dr. Gallaudet's interest in the education of the deaf did not cease when he gave up teaching, on the contrary he sought every opportunity to advance it here and abroad. He was a Director of the New York Institution, the Western New York Institution, the Northern New York Institution, the School at Beverly, Mass., and possibly one or two others. In the founding of all these schools, except the first named, he took an active part. He also assisted in the movements which led to the establishment of the schools at St. Louis and Scranton, and gave valuable advice to the promoters of the school at Preston, Eng-

land. It was the writer's privilege to be with him at several congresses of the deaf and their friends in Great Britain and he gladly bears testimony to the earnestness with which the good Doctor advocated the cause of deaf-mute education there, especially higher education. In all he made ten voyages to Europe, each time doing something for the welfare of the deaf there. His presence was always gladly welcomed, his suggestions given respectful attention and adopted when expedient.

Dr. Gallaudet had decided views upon the value of signs to the deaf for purposes of instruction, communication, social intercourse, mental and moral improvement and public worship. He strongly supported the "Combined System" and was the uncompromising opponent of those who seek to abolish altogether the use of signs in any way and for any purpose. Few persons have had the familiar acquaintance with the "sign-language" that he had; and none could excel him in its use. It was his "mother tongue," and with his long years of experience with it in every relation of family and pastoral life, he felt that he was a credible witness when he gave his "testimony as to its being a clear and distinct language by itself." He repeated again and again his firm conviction that "signs are to the deaf what sounds are to the hearing "; and he testified often that in preaching to deaf-mutes he lost all consciousness of the English language and thought directly in signs—so well did he grasp their genius. He recognized the value of oral instruction but considered the use of signs in many ways advantageous to even those who profited by it.

While the deaf were ever in his thought and affection, they did not bound his sympathies, which touched every good cause; and many are the charities outside of their domain in which he had a part. The New York Home for Incurables, the House of Rest for Consumptives, the Homes for Old Men and Aged Couples, and the Sisterhood of the Good Shepherd, of which he was the Pastor, had their inception in his parish.

He was long a member of the New York Historical Society; of the Clergymens' Retiring Fund; of the New York Churchmens' Association; of the Huguenot Society of America; and an honorary member of the Metropolitan Museum of Art.

As a preacher he was clear, earnest and reverent. His sign delivery was beautiful and possessed a grace and eloquence which charmed his congregation and held their close attention. He had none of the exaggerated affectation of gesture that so often verges upon buffoonery, but he was forceful, even vehement of action, when occasion required; and the humor he could express by signs was inimitable. He had powers of voice and abilities of elocution which would have distinguished him as a pulpiteer. Bishop Potter in his address at the funeral said, "Nobody who ever heard him read the service, and who knew what a singularly fine organ he had, and with what dignity and stateliness he could make himself heard in any congregation, could be unmindful that he was, as it were, putting one gift upon the shelf, in order that he might use the other for that people to whom he was bound in so many and such tender ways. I have always thought that his consecration of his gifts to their service was one of the finest things in the history of religion in this land."

He was a true pastor. He judged men with keen discrimination to which he added a tender charity. He was conscientious in the discharge of his duties and faithful to those who trusted him. His patience was extreme. He was never harsh, although he did not withhold rebuke when it was needed. No matter how undeserving or ungrateful one might be, he was always ready to allow "another chance." His sublime faith in God was one of the finest notes of his character. Did any one express doubt or impatience, his invariable reply was "We shall see; God will point the way." His aim and prayer was to lead his people nearer to God; and he answered well the description by Goldsmith in his "Deserted Village":

> "To relieve the wretched was his pride,
> And e'en his failings lean'd to Virtue's side;
> But in his duty prompt at every call,
> He watch'd and wept, he pray'd and felt for all;
> And, as a bird each fond endearment tries
> To tempt its new fledg'd offspring to the skies,
> He tried each art, reproved each dull delay,
> Allured to brighter worlds and led the way."

DR. HARVEY W. MILLIGAN.

Dr. H. W. Milligan who died at his home in Jacksonville, Illinois, on July 16th, was at one time a man of much prominence among educators of the deaf. He was born in Alford, Mass., in 1830,and graduated from Williams College in 1853,and in 1862 entered the University of Pennsylvania to study medicine, supporting himself while there by teaching in the Pennsylvania Institution for the Deaf and Dumb. He subsequently relinquished his purpose of following the profession for which he had been preparing and accepted, in 1865, the position of Principal of the Wisconsin School for the Deaf, where he remained until 1868, when he was called to the Illinois School. It was while at the head of the Wisconsin School that he, in company with Dr. Gillett and a number of other leaders in the work of teaching the deaf, while on their way to attend the National Conference of Principals held in Washington, D. C., in May, 1868, paid a visit to the Clarke School, at Northampton, Mass., in order to observe the methods and results of the work done there. Several of them, notably Dr. Gillett, Dr. Milligan, and Dr. Talbot, were very closely questioned by other members of the Conference as to what they had seen, and in the course of debate much skepticism was expressed regarding the value of oral instruction, but these three gentlemen, while not professing to be converts to the method, testified to the honesty and to the value of the work being done at the Clarke School. The opening remarks of Dr. Milligan, on this occasion, express the attitude with which they entered upon the investigation and the conclusions that were forced upon them by the evidence of their senses: "I do not know that I can say anything in addition to what has already been said. It is difficult for any person to knock over all the work of years; even though he has been laboring to build a cob-house, it makes him distressed to see it fall. I do not mean to say that our teaching has been of the cob-house order. I went to Northampton, not believing, for physiological reasons, that those who had no auditory nerve could ever learn to speak and articulate and it is not pleasant to me to find out that they can. (Laughter). I am willing to say that I am disappointed; but it is so, that they do talk. We cannot get around

it, and we have got to put up with it, for they won't stop talking for all our resolutions."

In 1882 Dr. Milligan accepted the chair of history and English literature in Illinois College, where his value as an instructor was quickly demonstrated and he won the love and veneration of the students by his personal worth. Aside from his college work, he was closely identified with all movements for the social, educational, or religious advancement of the city, and was founder or a leading member of several of its most prominent societies. He was author of "The Government of the State of Illinois," a valuable reference and text book. He is survived by his wife, a daughter, and a son, L. E. Milligan, a teacher in the Colorado School for the Deaf. We close this necessarily brief sketch of his life with the following tribute paid him in the columns of the Jacksonville *Daily Journal:*

"With the bereaved wife and children, all Jacksonville mourns the loss of Dr. Milligan. To know him was to love him, and a more widely respected citizen the community never had. Noble, constant, gifted, he was an ideal gentleman, and to the very end of his long and useful life he maintained his activity and, withal, his kindness and thoughtfulness for others. Of literary, retiring tastes, still he was ever ready to take his stand for public welfare, and was broad minded enough not to be bigoted. He was a friend to all; a lover of books; a patriotic citizen; a scholarly professor; a talented writer; and above all, a noble Christian man."

DEAF BOYS AT HARVARD.

In his address before the Department of Special Education, National Educational Convention, the President of the American Association refers to the graduation, last June, of three deaf young men from Harvard College. These were Homer Wheeler, Robert Pollak, and Tilston Chickering. Melvin Wheeler, a brother of Homer, also completed his studies there, but did not receive a degree, having taken a special course because of ill health.

Of these boys we learn that Homer and Melvin Wheeler and Robert Pollak were all born deaf, while Tilston Chickering was partly deaf in infancy and is believed now to be wholly so. The first three received their early education at the Clarke School, Homer being there nine years, Melvin eleven years, and Robert, who had received three years previous instruction from a private teacher, four years. They are said to have been exceptionally bright and hard-working pupils. After completing their course at the Clarke School, the Wheeler boys entered the second year of the English High School in Cambridge and graduated from the regular course, while Pollak spent the same length of time in the Brown-Nichols Preparatory School in Cambridge. Homer Wheeler and Pollak then passed the entrance examinations to Harvard and took the regular course in the Lawrence Scientific School, but Melvin Wheeler, because of the condition of his health, remained at home. He, however, continued his studies with his brother and so well did he keep pace with him that he was able to enter college for the third year work, and to complete the course with credit.

Tilston Chickering spent six years in the Horace Mann School, in Boston, where his scholarship was that of an average pupil of studious habit of mind. From there he entered the Berkeley School where he prepared for the Harvard examina-

tions. He does not appear to have been a particularly brilliant student, but to have won his degree by steady, persistent effort. While in the college the young men were all members of various societies and took an active part in the social life and athletics. Homer Wheeler and Robert Pollak will become civil engineers while Tilston Chickering will do further work in the Lawrence Scientific School with the intention of ultimately becoming a mechanical engineer.

The school and college history of these boys should be an incentive and an encouragement for other deaf boys to surmount, as they have done, the barriers their affliction places in their way to a liberal education. It is interesting to note the stress their instructors in the college place upon the value of speech and lip-reading in pursuing the studies of the course. One of them is represented as having sacrificed his beard in order that his deaf students might the more easily understand him.

ANNUAL MEETING OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

The Annual Business Meeting of the American Association to Promote the Teaching of Speech to the Deaf was held on Wednesday, June 11th, 1902, at the Institution for the Improved Instruction of the Deaf, corner of Lexington Avenue and 64th Street, New York City.

The Meeting was called to order at 11 o'clock, First Vice-President Dr. A. L. E. Crouter in the chair. The following members were present: Dr. A. L. E. Crouter, Philadelphia, Pa; Dr. Z. F. Westervelt, Rochester, N. Y.; Mr. F. W. Booth, Philadelphia, Pa; Mr. Edward P. Clark, Washington Heights Institution, New York City; Mr. E. A. Gruver, Miss Margaret R. Marshall, Mrs. P. W. Carhart, Mr. P. W. Carhart, Miss Edith B. Nesbit, Mr. Timothy F. Driscoll, Mrs. Timothy F. Driscoll, Miss Margaret Worcester, Miss Lydia Cook, Miss Mary B. Shaw, Miss Carrie H. Summers, Miss May E. Turner, and Miss Julia Connery, Institution for Improved Instruction, New York City. The call for this meeting published on page 198 of the ASSOCIATION REVIEW for April, 1902, as follows, was read:

CALL FOR THE ANNUAL MEETING OF THE ASSOCIATION.

To the Members of the American Association to Promote the Teaching of Speech to the Deaf:

The Summer Meeting appointed to be held at Chautauqua, N. Y., having been postponed, the annual business meeting of the Association will be held at the Institution for the Improved Instruction of Deaf-Mutes, 904 Lexington Ave., New York City, on Wednesday, June 11, at 11 a. m. The date and place of meeting have been fixed by the Board of Directors;

and the special business will be the election of three Directors, to serve for three years, in place of the retiring Directors whose term expires in 1902, viz.: Z. F. Westervelt, Sarah Fuller, Joseph C. Gordon.

There will be no literary exercises, but a mere formal business meeting to comply with the Constitution. An amendment to the Constitution will be offered to increase the membership of the Board of Directors. For further particulars address Dr. Z. F. Westervelt, Secretary, Rochester, N. Y.

ALEXANDER GRAHAM BELL,
President of the Association.

Z. F. WESTERVELT,
Secretary.

The minutes of the last annual meeting of the Association, held at the Western New York Institution for Deaf-Mutes, at Rochester, N. Y., on Tuesday, May 28th, 1901, were read and approved.

The Secretary then read the letter addressed to himself, dated April 10th, 1902, (which was a duplicate of the letter addressed to the President), making nominations for the office of Director, in accordance with Section II, Article V of the Constitution, nominating Z. F. Westervelt, of Rochester, N. Y., Sarah Fuller, of Boston, Mass., and Joseph C. Gordon, of Jacksonville, Ill., to fill the places made vacant by the expiration of the terms of office of the three Directors named in the call.

Acting President Crouter appointed, as inspectors of election, Mr. Gruver and Miss Marshall, and directed that the Association should proceed to ballot for Directors, under the supervision of the inspectors; (quoting Article V, Section II) "No person could be eligible to office who had not been nominated in writing to the President and Secretary, at least one month prior to the day of election;" therefore no one, other than those whose names had been read could be elected. The inspectors collected the ballots and reported to the President who announced that Z. F. Westervelt, of Rochester, Sarah Fuller, of Boston, and Joseph C. Gordon, of Jacksonville, Ill., were elected Directors of the Association for three years, their term of office expiring at the close of the Summer Meeting in 1905.

Mr. F. W. Booth, Treasurer, presented his annual report to the Association as follows:

TREASURER'S REPORT FOR THE YEAR ENDING JUNE 11, 1902.

Balance as per Report of May 28, 1901	$1,028 01

RECEIPTS.

Life membership fees, Miss Emma Snow and Mrs. Edmund Lyon	100 00
Alexander Graham Bell, annual subscription	1,500 00
Mrs. S. Sachs, subscription	10 00
L. S. Fechheimer, annual subscription	25 00
Annual membership dues	1,012 00
Subscriptions to Association Review	14 70
Sales of publications	21 85
Advertising in Review	32 00
American Security and Trust Co., income from invested funds	1,205 11
Interest on bank deposits	20 52
	$4,969 19

DISBURSEMENTS:

Salary and wages account	$2,411 63
Printing Review, 6 numbers	769 15
Printing, job-work, circulars of information, etc	115 52
Translating, reviewing, etc	147 23
Binding, mailing, postage on Review, etc	48 60
Wrapping paper	1 75
Engraving	41 67
Fee for Treasurer's bond	10 50
American Security and Trust Co., two life membership fees transferred to Permanent Endowment Fund	100 00
Postage, express, telegraphing, traveling, etc	292 13
Balance	1,031 01
	$4,969 19

F. W. BOOTH, *Treasurer.*

Approved June 11, 1902,
A. L. E. CROUTER, *Auditor.*

The report was accepted and approved.

Dr. A. L. E. Crouter, as special committee, presented a report on the request made by the Board of Directors of the Association for the establishment at the Pennsylvania School for the Deaf, of a Normal Training Department;—that the Pennsylvania Board of Directors had decided against the establishment of such a Department in that Institution. Upon motion the report was accepted and the committee discharged.

The following amendment of the Constitution was submitted to the Association, under the provision of Article V, by Dr. A. L. E. Crouter:

Amend Section 1, Article V, of the Constitution as follows:

Strike out the word "nine," second line, and insert " twenty-one." Strike out the word "three," same line, and insert "seven." Add at the end of the first sentence after "years," the following: "provided, however, that no retiring director shall be eligible for re-election for the term next ensuing; and provided, further, that three of the seven directors thus elected at any annual meeting shall not be actively engaged in the work of teaching the deaf." And further, by adding the following words to the last sentence regarding the appointment of inspectors of election for directors: "in case of failure of the President to appoint, by the chairman of the meeting."

As thus amended, Section 1, Article V, will read as follows:

The Board of Directors shall be composed of twenty-one members of the Association, seven of whom shall be elected by the Association at each annual meeting to serve three years, provided, however, that no retiring director shall be eligible for re-election for the next term ensuing; and provided, further, that three of the seven directors thus elected at an Annual Meeting shall not be actively engaged in the work of teaching the deaf. Directors shall be elected by ballot under the supervision of inspectors to be appointed by the President; in case of failure of the President to appoint, by the chairman of the meeting.

Mr. F. W. Booth also submitted an amendment of the Constitution, as follows, under the provisions of Article VIII, Section 1; to amend Article V, Section 1, of the Constitution, as follows:

Strike out the word "nine," second line, and insert "twenty-one." Strike out the word "three," same line, and insert "seven." Add at the end of the first sentence after " years", the following: "Provided, however, that not more than two of the retiring directors shall be eligible for re-election for the term next ensuing; and provided, further, that three of the seven directors thus elected at any Annual Meeting shall not be actively engaged in the work of teaching the deaf." And further, by adding the following words to the last sentence regarding the appointment of inspectors of election for directors: "in case of failure of the President to appoint, by the chairman of the meeting."

As thus amended, Section 1, Article V, will read as follows:

The Board of Directors shall be composed of twenty-one members of the Association, seven of whom shall be elected by the Association at each annual meeting to serve for three years; provided, however, that not more than two of the retiring directors shall be eligible for re-election for the term next ensuing; and, provided, further, that three of the seven directors thus elected at an Annual Meeting shall not be actively engaged in the work of teaching the deaf. Directors shall be elected by ballot, under the supervision of inspectors, to be appointed by the President; in case of failure of the President, by the chairman of the meeting.

Acting President Crouter stated that these amendments, submitted for the consideration of the Association, under the provisions of Article V of the Constitution, would be laid upon the table to be voted upon and accepted or rejected at the next Association meeting.

Upon resolution, the General Secretary was directed to print the By-Laws, revised to date, and to furnish copies to members upon request; the number and form to be left to the discretion of the General Secretary.

It was moved that the General Secretary secure from the Committee on Necrology its report for publication in THE REVIEW.

The minutes were read and approved, and the meeting adjourned.

(Signed) Z. F. WESTERVELT,
Secretary,

NEW MEMBERS.

The following persons have been elected to membership in the American Association to Promote the Teaching of Speech to the Deaf since date of the last report:

Archibald, Carrie H., 1225 Chestnut St., Milwaukee, Wis.
Baker, Nettie, 6550 Yale Ave., Chicago, Ill.
Bannister, Ina E., Potsdam, N. Y.
Beatty, Gordon, 207 Simcoe St., Toronto, Canada.
Bell, Frances K., Fulton, Mo.
Bennett, Florence E., Macon, Mo.
Betson, Anna L., Greensboro, Caroline Co., Md.

Blomkvist, J., Dofstumskolan, Orebro, Sweden.
Camp, Anna R., 2559 Michigan Ave., Chicago, Ill.
Carhart, P. W., 904 Lexington Ave., New York, N. Y.
Carhart, Mrs. P. W., 904 Lexington Ave., New York, N. Y.
Connery, Julia, 904 Lexington Ave., New York, N. Y.
Cooper, Jennie Alston, Charlottesville, Va.
Curtiss, Louise A., Waverly, Illinois.
Driscoll, Timothy F., 904 Lexington Ave., New York, N. Y.
Fjartoft, F. A., Skole for döve, Vibes gade 7, Christiania, Norway.
Flagg, Helen J., West Hartford, Conn.
Garman, Tillie, 841 Holland Ave., Wilkinsburg, Pa.
Gilroy, Elizabeth P., Mystic, Conn.
Gordon, Kathlena W., Hauppange, L. I.
Guldberg, F. O., St. Olafs gade 17, Christiania, Norway.
Gutzmann, Albert, Stadt. Taubstummenschule, O. Markus Str. 49, Berlin, Germany.
Hare, Wm. B., School for the Deaf, St. Augustine, Fla.
Howe, Henry S., Essex St., Longwood, Brookline, Mass.
Howe, Sarah B., Tuileries, 270 Commonwealth Ave., Boston, Mass.
Jones, Elizabeth Ogwen, 2021 Edna Ave., Scranton, Pa.
Jones, Geo. A., 137 Water St., Cleveland, Ohio.
Jayne, Henry La Barre, 505 Chestnut St., Philadelphia, Pa.
Mears, Willard S., 36 East 20th St., New York, N. Y.
Melchert, Martha E., 40 Clifford St., Roxbury, Mass.
Nesbit, Edith B., 904 Lexington Ave., New York, N. Y.
Porter, Mrs. Alice M., Pierce Building, Huntington Ave., Boston, Mass.
Purtell, Mary J., St. Joseph's Inst., 113 Buffalo Ave., Brooklyn, New York.
Putnam, Geo. H., School for the Deaf, Olathe, Kansas.
Riedle, Anna R., Wilmington, Ohio.
Rice, W. E., 137 Water St., Cleveland, Ohio.
Ross, Edith, Olathe, Kansas.
Russell, Jane L., School for the Deaf, Jacksonville, Ill.
Spencer, Margaret J., 1012 N. Capitol Ave., Indianapolis, Ind.
Steiger & Co., E., Newspaper Box 298, New York, N. Y.
Thompson, Mary H., 38 Rutland Sq., Boston, Mass.
Thompson, Fannie E., Pittsboro, N. C.
Thurber, Amey, 170 Broad St., Providence, R. I.
Turner, Mary E., 904 Lexington Ave., New York, N. Y.
Way, Frances Burr, School for the Deaf, Staunton, Va.
White, Wm. Jr., 714 Arcade Building, Philadelphia, Pa.